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The Course of Study

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VOL. I. JUNE, 1901. NO. 10.

THE COURSE OF STUDY

A PUBLICATION FOR TEACHERS AND PARENTS

ISSUED MONTHLY—TEN NUMBERS A YEAR.

Suggestions as to the Study of Psychology*

Francis W. Parker

XIV.

TESTIMONY OF THE SENSES. Whenever I see an object, I am conscious of something. That something of which I am conscious is not that object. That object is not in my consciousness—but something is. What? Nothing outside of my consciousness can be in my consciousness. "I see" means "I am conscious of *something*." I do not act upon the object I see. If I did the action would change the object. The object acts upon me and changes my consciousness—I am conscious of the change—that change is an image *corresponding* to the object that I see. I know an object because I have an image of that object. I can recall and hold in my consciousness the images I have acquired by seeing. Seeing is imaging.

I close my eyes and touch various objects. I know what they are by the sense of touch. In order to know what these objects are I touch them. "I touch" means "I image." I hear sounds—I know the sounds because I have images corresponding to them.

Recall sounds, tunes, voices, etc., that you have heard; make the same tests with taste and smell.

Every act of the senses of which I am conscious is an act of imaging.

*Note by the Editor: I would suggest to our subscribers that they bind the numbers of the COURSE OF STUDY into one or two volumes. They will always be valuable for study.

XV.

HOLDING IMAGES. Perform a series of experiments by holding images in consciousness. What happens when you hold an image? How long am I able to hold an image? Does it change all the time I am holding it? How does it change? Recall a story. Can I image it from beginning to end? You forget some part of the story. What is forgotten? The coming of new elements and new images into the image while you are holding it is called growth—the image grows.

Extracts from Notes on Psychology

MAUDE GREENE

Imagery in Related Subjects

The coming in of all images pertaining or relating to one image to strengthen it is called correlation. The Herbartians call it apperception. Others call it association.

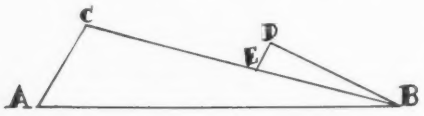
Example: The psychological function of physiography is imaging the earth's surface. The psychological function of geology is to strengthen this image by images of processes of formation. An image of a mountain would be strengthened by an image of the way in which it was formed. The psychological function of mineralogy is to strengthen the image of the earth's surface by images of materials which make up the surface. The psychological function of meteorology is to strengthen the image by images of the causes of changes in the earth's surface. In physics and chemistry we find the laws and processes of change. These strengthen the image of the earth's surface. The

agent of all change is heat. The function of these things is life. We image the earth's surface in relation to its function, life. These images are botany, zoölogy, and anthropology.

All study is infinite. We cannot study the tree without studying all of the above-named subjects, for we cannot have strong images of the tree without images which relate and pertain to it. The related images include images from all these subjects of study. The confusion has resulted from classifying and isolating these as separate and distinct studies.

Illustration: As a help to the imaging of North America we may use this geometrical figure, remembering that points, lines, and surfaces are only devices which the mind uses to assist in imaging, and that they do not exist out of the mind.

AB represents sea level. C is a point in the



Rocky Mountains. The line CB is without modification at the St. Lawrence basin. It is modified by break represented by EDB at the Appalachian Mountain system, the line ED being a part of Mississippi River basin. The line ACB is constantly wearing away; when it reaches line AB, water level, the continent will disappear.

A knowledge of the way the earth's surface has been made is a help in imaging it. A knowledge of how mountains have been formed might be a help in imaging them. The principal agent of mountain-making is gravitation.

Four ways in which mountains have been formed:

1. By volcanic action.

2. By folding; great pressure coming at two different places. The crust between bends or folds.

3. By faulting; great pressure forcing crust down and leaving high walls around it.

4. By erosion of land; leaving flat-top mountains, called relicts.

We can study only changes. Logically we come to the causes of these changes and to the law of all changes. The causes of these changes are heat and gravitation. The study of these laws is physics and chemistry.

Illustration of correlation between geography and history: Question: Why is the northeast coast of the United States a rocky and wearing one, while the southeast coast is a building one?

Answer: The Arctic current comes close to the northeast coast, and wears it away. The Gulf Stream is farther from the southeast coast, and it brings a vast amount of sediment with it, the greater part of which is furnished by the Mississippi River. This difference in the coast has had a great influence on industries of the two sections, and consequently upon their history. The fine harbors in the northeast coast have developed commerce, and the rocky soil of this region has made manufacturing necessarily its principal industry. The low coastal plain on the south has made agriculture its principal industry and cotton its chief product. Cotton was responsible for a vital movement in the history of the United States. This land wearing and making influences history. The great icebergs coming down from northern glaciers meet, when they get near Newfoundland, and as they melt they deposit the material they contain, and form the shoals or banks over which fish are easily caught. The fisheries become the great industry and wealth of this land, and a great influence in its life and destiny.

Question: What helps have you derived from this study of psychology as related to geography?

Answer: I can see that it has all been of great benefit to me in helping me to image North America as a piece of land rather than a map. At first I thought the geometrical figure no help at all, rather a confusion, but now I begin to see it as a help. This thought of imaging the land as I studied it has given me an entirely different idea of study, and particularly of teaching. I begin to see that teaching is the presentation of conditions most conducive to the growth of images. Heretofore my idea of teaching was to hear lessons carefully, patiently, and conscientiously, explaining everything I could; but the revelation leaves me appalled at the magnitude of the undertaking.

Question: Is the map drawing and modeling a help in the imaging of the continents? As we draw or mold do we image the country we are making?

Answer: I think I am beginning to image it to some extent before I draw it, and afterward; but during the process of either molding or drawing I am so concerned with the mechanical difficulties that they absorb my attention.

Expression in relation to imaging: So many

of my images are very vague and indefinite that I begin to think it is because they were never expressed. Expression was not a feature in my education, and I think I never was educated. There was no necessity for a strong image in the régime under which I studied, because no expression was asked for. Expression demands a strong image, and cannot be had without it. Expression brings the growing image. I thought I had a fairly strong image of the surface of Mexico until I began to model it. Then I had to go over and over all I had heard and seen for the improvement of my image. I find the strongest images I have ever had were those gained out of school, but I never realized until to-day that the reason is this — that I executed or expressed them. I did not need strong images in order to pass my examinations and get high marks, and that is what I worked for in school. We can do nothing without first imaging. It follows that what we have executed or done has required the strongest images. When I have planned and thought and executed for my household, I have had the strongest images. I had to image when I prepared and served a dinner or directed it. I think I know now one reason why I always disliked history and thoroughly liked any sort of mathematical work. History was merely a memorizing of statements for me. Arithmetic, algebra, and geometry gave me something to work out. The test of the strength of the image is expression. Even the most general form of expression, speech, reveals the weakness of the image.

Discussion: How can one gain strong images?

I cannot tell, but I feel sure that expression is not merely a test of a strong or a weak image; it is also a means of getting strong images. For example, we went to the conservatory to paint the banana tree. I realized when I came away that if I had learned nothing about drawing or painting, I had learned much of the banana tree. The date palm we did not try to draw, but I was much interested in it, having never seen one before. To-day, I cannot recall the form or appearance of it. This shows the relation of expression to the gaining of strong images.

The strong image is also gained by thinking out processes for one's self, by reaching conclusions after a process of reasoning, instead of having the conclusion of others presented first. For example, in our history work I know the images that I hold of the stages and development of primitive man, which I gained from thinking about it myself and discussing it in the class, are much stronger than if I had read these statements and learned them, or if some one had told them to me.

Note: I never was asked to think or give an opinion of my own in my previous school-work. I cannot remember of ever being asked for my own opinion on any subject. When I first heard all of this discussion of strong images I felt discouraged, realizing how weak and vague my images had always been, and I felt that I never could teach with such a stock of attenuated images; but now I think my lack might make me all the more zealous that children should never have so dead a thing thrust upon them in lieu of teaching as I have. My idea of teaching is revolutionized.

Notes on Plan for the Study and Record of Pupils

Francis W. Parker

The purpose of this plan is, primarily, to enable teachers to study their pupils. The record of teaching and training must be read in the body, mind, and soul of the pupil. Each item in the blank is a standpoint of observation from which qualities of character may be rightly estimated. Experience proves that most teachers, no matter how sound their theories, are dominated by the knowledge and skill ideal; they fix their minds unwittingly, and often unwillingly, upon definite amounts of knowledge, and not upon qualities of character. To change from the old ideal to the new means the breaking up of the inveterate habit of holding knowledge as the aim of teaching, and substituting therefor the new and living way of charac-

PLAN FOR THE STUDY OF PUPILS

I. Motive as Manifested in	II. Intellect.	III. Body.	IV. Expression.
1. Personal influence upon the class. 2. Personal influence upon the school. 3. Courtesy and politeness. 4. Kindness. 5. Genuineness and honesty. 6. Responsibility. (a) Trustworthiness. 7. Moral courage. 8. Respect for the rights of others. 9. Helpfulness. 10. Taste. 11. Cheerfulness.	1. Attention, or Imaging. (a) Correlation of images. (b) Observation. (c) Hearing language and study. (d) Reading and study. (e) Analysis. (f) Comparison. (g) Judgment. (h) Inference. (i) Casual relations. 2. Originality. (a) Creative power. (b) Tact. 3. Will, as manifested by persistence in study. (a) Effort to improve. 4. Judgment in measuring quantity. (a) Reason in applied mathematics.	1. Health. 2. Care of Health. 3. Cleanliness. 4. Nutrition. 5. Habitual Posture. 6. Senses. (a) Sight. (b) Hearing. 7. Motor Control. 8. Rhythm.	1. Voice. 2. Singing. 3. Speech. (Thought.) (Technique.) 4. Oral Reading. (Tho.) (Tech.) 5. Dramatic Power. 6. Writing. (Tho.) (Tech.) 7. Language. 8. Making. (a) Woodwork. (Tho.) (Tech.) (b) Textile. (Tho.) (Tech.) (c) Modeling. (Tho.) (Tech.) (d) Painting. (Tho.) (Tech.) (e) Drawing. (Tho.) (Tech.) 9. Housekeeping. (a) Cooking. (b) Cleanliness. (c) Neatness. (d) Attention to Details. (e) Skill.

Suggestions for Abbreviations:

E = Excellent G = Good P = Poor
V G = Very Good F = Fair V P = Very Poor

ter-building. This radical change demands steady and prolonged concentration upon the natures, instincts, tendencies, and characteristics of children, to the end that the one thing needful—character—be developed.

This blank is, then, for the self-criticism of the teacher. The first and last duty of the teacher is to acquire skill and efficiency in the art of arts, teaching. To this purpose every energy should be bent, every thought tend, all study culminate. Within just limits the faults of the pupil are manifest signs of inefficiency on the part of the teacher. Insolence, impertinence, indifference, and inattention are the negative results of ineffective teaching and training. The proof of this assertion is that another teacher may have nearly perfect order with the same pupils.

All the richness and fullness of subject-matter, all the modes of expression, the strong stimulus and strong incentives of community life, the ever-active instincts of children, the children's craving for work, their hunger for knowledge—all these every teacher has at his service, *if he will use them*. The teacher has no ground *to go over*, no definite quantity of knowledge and skill to teach. He has only one thing to do, and that is to present the right conditions for the evolution of the qualities of righteous character. The long pathway that leads up to the art of arts is concentration upon the character of the pupil.

A second use of this blank is mutual aid

on the part of the teachers in a school in understanding their pupils. Differing judgments of pupils on the part of teachers should lead to a mutual understanding. A difference in opinion may be a difference in the quality of teaching, and it may be a difference in discernment of character.

It is necessary for the principal of a school to have reports on the pupils in the school, in order to make recommendations to parents, and to suggest better means for the growth of pupils. Teachers should mark only those qualities of which they are sure. They should do nothing by guess. If they are not able to mark any one quality here put down, they should make further study of the pupil.

The moral, mental, and physical qualities are grouped opposite each other in the blank, so that the attention of the teacher may be easily called to their relations.

The abbreviations used are simply for economy in reporting. This blank is never to be seen by the pupil, nor even known to him, and there is, therefore, no danger in it of a false stimulus.

Space is left at the bottom of the blank for anything the teacher may wish to write in addition to what the blank calls for.

The blank will be kept year after year, and filed for reference. Special records of pupils may be kept by class and departmental teachers. These will go more into detail than it is possible to do in a report like this.

Finally, this blank is simply tentative. The thought and discussion of all the faculty are to be brought to bear on the devising of a blank that shall be as nearly perfect as possible.

I. Motive: Every pupil, like every other human being, is constantly striving to accomplish something, to reach some end and aim, near or remote, bad or good. The being in action, under the incentive of the end to be realized, constitutes motive. To recognize a pupil's motive in one phase, at least, is to know that pupil. The tact to change a wrong motive to a right one is one of the most valuable qualities in the art of teaching; for to induce and cultivate right motives comprehends the whole art of teaching. For lack of something better to do, pupils often try to tease the teacher (a biological experiment). The cure is at hand; decline to be vexed. Pupils like to "show off," to make their mates laugh, etc. Tact in a teacher is to discern immediately the pupil's motive and to change it to that which is good and wholesome.

Influence upon the Class. That which above all things tests a pupil's character is his influence upon his mates. His example in work, play, self-control, order, is the main thing to be cultivated. Sympathy, helpfulness, kindness, thoughtfulness for others, are the signs of good influence. As citizenship is the ideal, personal influence is the test of citizenship.

Courtesy and Politeness. The intrinsic quality of order in the school is true, soul-felt courtesy and politeness. Respect for the rights of others, reverence for authority; sympathy for all, and especially for the weak and unfortunate; kindness, interest in the welfare of the community, are the essential qualities of character, all of which spring from courtesy and politeness. A cheery "Good morning," a hearty handshake, a smiling face, all add much to the day's work.

Genuineness. Genuineness is the true, honest, independent manifestation of self in thought and action. Its opposite, hypocrisy, is the covering up, the suppression of self, in order to conform to the ideas of others, especially to those in authority. The motive for such conduct is love for approbation, the gaining of favors, high marks, and they desire "to show off."

Lack of genuineness is generally caused by a weakness of will-power.

Hypocrisy is a very common product of the school, and is too often cultivated by teachers. Teachers may like to have their opinions unquestioned, their statements taken without discussion. They often rely upon the words of the text, hold them as infallible, and insist upon their literal acceptation. The innocent pupils soon learn to comply, conform at least outwardly, and never have, much less utter, an original thought. Moral courage is the root of genuineness.

Genuineness is by no means a synonym for goodness. It enables the teachers, however, to understand their pupils, without which very little true progress can be made. Shrewdness, sharpness, acuteness, may be easily developed, but genuine honesty is quite different. It stands among the noblest qualities of character.

Responsibility. Citizenship requires the pupil to be responsible for his companions, his class, and for the whole school. This feeling of responsibility is intrinsic to citizenship. Responsibility leads to making one's self the best possible example, by helping others in the best way. A sense of responsibility arouses manliness, self-confidence, and personal dignity. Education without responsibility is impossible.

Trustworthiness. Trustworthiness is the outcome of responsibilty. Its main content is honesty. Its realization is through knowledge, skill, work, and faithfulness. Most of all, children like to be trusted. Suspicion of wrong-doing breeds wrong-doing. The students of Dr. Arnold said: "We never could tell him a lie, because he believed all we told him."

Helpfulness. Helpfulness comprehends nearly all of the other qualities of character. It demands study on the part of the helper of that which is most needed by others, for knowledge and skill are essential to efficient help. The art of teaching may be summed up in one purpose—the cultivation of the spirit of helpfulness.

Taste. Good taste, in a broad sense, comprehends a number of virtues. On one side is the love of the beautiful—taste in nature and art—admiration for the best painting, sculpture, literature, music, decoration, dress; discrimination between the beautiful and the ugly, between dirt and disorder, and cleanliness, neatness, and harmony. On the other side there are the recognition of truth, honesty, reason, and all the intrinsic virtues of noble character.

II. Intellect: Attention, or Imaging. Strong mental images, and images growing strong, form the basis of all intellectual growth. Images may be classified as follows:

1. Images that correspond to objects in the external world; acquired by observation.

2. Images of objects that lie beyond the sense grasp; acquired by hearing language, reading, pictures, maps.

3. Images formed by constructive and creative imagination.

The function of language, oral and printed, is to unite images that *have already been in consciousness.* If such images are strong, the new (united) image will be strong; if they are weak, the new image will be weak.

Analysis. Analysis of external objects depends entirely upon the images in consciousness; indeed, there can be no such thing as a growing image without analysis.

Comparison. Any two objects compared must have their corresponding images in consciousness. The value and thoroughness of the comparison depends upon the strength of the images.

Judgment and all the processes of reason have their foundation in strong images.

CORRELATION. Correlation is the uniting or merging of congruous images. If images are strong, they move together into our apperceptive mass. This merging or growing of strong images is thoroughness.

CAUSAL RELATIONS. Strong images form the initial steps to the processes of reasoning which lead to a knowledge of causes. The images are the knowledge of the effects that may lead one to find the cause.

PERSISTENCE IN WORK. No mark of intellectual power is more promising than the habit of hard educational work under the right motive. Pupils who work out their own problems with little or no help, who overcome difficulties and stick to tasks that are not in themselves pleasant, who do the work assigned them, and far more, are on the road to successful lives. Teaching consists in inducing pupils to do excellent educative work.

MEASURING QUANTITIES (ARITHMETIC). Measuring quantities is intrinsic to all true study. Every branch of study demands constant measuring for the growth of clear images. The isolation of arithmetic in school work makes it difficult for teachers to use arithmetic properly.

Pure numbers require the learning and remembering of numerical facts. Measuring quantities demands imaging, analysis, comparison, and the exercise of reasoning power.

III. The Body: Defects of the body mean, in general, defects of the mind. No teacher can truly help a pupil without some knowledge of the bodily conditions named.

IV. Expression: Through expression in all its modes the teacher may read the characters of his pupils and understand their moral, mental, and physical strength and weakness. Each mode of expression reveals some phase of character. Expression has a powerful and indispensable reaction upon thought. Expression is essentially self-realization.

Colonial History

Emily J. Rice

The value of a history course in school depends very largely upon the relation it bears to the vital experiences of the children. If they are given an opportunity to do social work, they wish to know what they are doing, and why they are doing it. The first great mission of the school is to give the child something to do, and the second is to fill that work with meaning by showing its relation to the larger movements of life. It is more important that the material of the history lessons should have this close connection with the social activities of the school than that any logical order of the subject-matter should be considered. In fact, the kind of work being done suggests both historic subject and order of topics.

Experience has led us to believe that it is well to allow some one art especial prominence in each grade for the sake of carrying on the constructive work more thoroughly than would otherwise be possible. If the children are doing textile work, or making pottery, or learning to print or bind books, they may need a long time in which to secure a good result. When they are putting forth continued effort in a particular direction, study of the history of that activity shows the value of their labor in terms of the great field of human endeavor. This plan involves the

selection of such periods of history for study as have the most direct bearing upon the social occupations, and presenting the topics in the order suggested by the problems of these occupations. It changes our point of view in teaching. We consider no longer the logical order of the subject-matter, but the attitude of the children's minds in relation to it.

Among the most valuable arts for the children are those belonging to the manufacture of clothing. The textile industry is one of the greatest in our own country, and it is necessary to understand it to get a comprehension of the social situation. By the study of it, children learn that their comfort depends upon the labor of others in fields and factories. By actual work in spinning and weaving, they become able to appreciate the work of the world.

The little children may spin with the spindle and distaff and weave on a simple hand-loom. The children of the middle grades can use the spinning-wheel and the Colonial loom. For these older children, the study of the life of our Colonial forefathers seems especially desirable. This period is a comparatively simple one as far as institutions are concerned. The struggle of the pioneers with the hard conditions of the new environment are those that children can appreciate. The problems of the development of their industries are such as the children can work out for themselves. It is a period of adventure and heroic action. Both from the standpoint of industrial life and qualities of character, it furnishes suitable material for the middle grades.

Outline of Topics for Work and Study

I. Spinning of flax and wool by means of the spinning-wheel. Carding.

II. Weaving on Colonial loom and small hand-looms. Sewing.

III. Study of materials, manufacture, design, and color.

IV. Study of the textile work of Colonial times.

1. Illustrations: objects; pictures; visits to museums.

2. Dress of the Colonists: New England; Virginia; New York; Pennsylvania.

3. Materials and manufacture.

V. A New England community.

1. The home: occupations of the people; family life; houses; food; amusements.

2. A farm: variety of products; physiographic features that have affected industries; labor; life on the farm; education.

3. A village: location; causes of growth; industries; labor; classes of people; social life; education.

4. The town-meeting: effect of economic conditions upon government.

5. Growth of colony from its settlement.

References: Weeden, *Economic and Social History of New England;* Palfrey, *Compendium History of New England;* Alice Morse Earle, *Customs and Fashions of Old New England, Home Life in Colonial Days, Costume of Colonial Days,* and *Children of Colonial Days;* Fiske, *The Beginnings of New England;* Doyle, *English Colonies in America;* Lodge, *English Colonies in America;* Eggleston, *The Beginners of a Nation;* Griffis, *Pilgrims in Their Three Homes;* Coffin, *Old Times in the Colonies;* Hawthorne, *Grandfather's Chair;* Tiffany, *Pilgrims and Puritans;* Hart, *American History told by Contemporaries;* Caldwell, *A Survey of American History;* Davis, *The Physical Geography of Southern New England;* National Geographic Monographs.

VI. A Virginia Plantation.

1. Appearance of plantation; size; vegetation; agriculture; laborers; isolated houses; absence of villages; household industries; education of people.

2. Physiographic conditions that affected the social life of the colony.

3. Geography of the tide-water region; wide strip of fertile soil; piedmont and mountain region; rivers; harbors. Compare with the New England plateau.

4. The Virginia country. Compare with the New England town.

5. Growth of the colony from its beginning.

References: Bruce, *Economic History of Virginia in the Seventeenth Century;* Doyle, *English Colonies in America;* Lodge, *English Colonies in America;* Fiske, *Old Virginia and her Neighbors;* Cooke, *Virginia* and

Stories of the Old Dominion; Hart, *American History told by Contemporaries.*

VII. The Dutch in New York.

1. Dress of the men and women; houses, interior and exterior; occupations; schoolhouse, tea-parties, night-watchman, town-herder, etc. Let the children learn all they can from pictures, and then supplement their observations from Irving and Mrs. Earle.

2. The story of Henry Hudson and the founding of New Amsterdam as a result of his voyage. Motive of the Dutch in settling. Compare with that of the English at Plymouth and Jamestown. Geography of the Hudson and Mohawk valleys. Show how nature made trading and commerce easy. The situation of Manhattan Island—why did New York become the leading city of the United States?

3. Compare the government of the colony with that of Plymouth. The Wallooms and Patroons. The Dutch governors, with special attention to Peter Stuyvesant. The Swedes on the Delaware and the English on the Connecticut. Why did the Dutch surrender to the English in 1664?

4. Holland. Show life in Holland by pictures. Study a relief map of Holland, noticing the rivers and the height of the land above sea level. Draw conclusions as to how the land was formed and its quality.

5. Occupations. Result of the geography of the country. (a) Grazing—the Dutch cattle are some of the finest in the world. Why? Show picture of Paul Potter's Bull. Dairy products. Leather. (b) Agriculture and horticulture. (c) Commerce—due to what? Why are canals a necessity? Colonies of Holland and how Holland at one time did nearly all the carrying trade of Europe. (d) Manufacturing—functions of the wind-mill. Cloth manufactures. Why is the making of bricks, tiles, and china such an important industry? (d) Fishing—importance of the herring.

6. Cities. Have the children get the life in and the architecture of the cities of Amsterdam, Rotterdam, The Hague, Delft, Leyden, from pictures. Tell simply and forcibly the story of Holland's struggle for liberty, which culminated in the siege of Leyden. Read selections from Motley.

Literature Studies: *Rip Van Winkle* and *Sleepy Hollow*, by Washington Irving.

References: Alice Morse Earle, *Colonial Days in Old New York;* Irving, *Rip Van Winkle* and *Sleepy Hollow, Knickerbocker History of New York;* Fisher, *Colonial Customs and Manners;* Winsor, *Narrative and Critical History*, v. 3, 4; Bancroft, *Colonization of the United States*, v. 2; Dodge, *Hans Brinker, Picturesque America;* Wright, *Stories of American History*, pp. 292–300; *Artist Strolls in Holland*, Harper, v. 66; Higginson, *Young Folk's History;* Eggleston, *History of the United States* (illustrated), *First Book in American History, Stories of American Life and Adventure*, v. 54; Gilman, *Historical Reader No. 2*, v. 7, 8; Tuckerman, *Peter Stuyvesant;* Schuyler, *Colonial New York;* Paulding, *The Dutchman's Fireside;* Motley, *Rise of the Dutch Republic, Old South Leaflets;* Hart, *Source Book.*

VIII. The Quaker Colony.

1. The old city of Philadelphia. Buildings associated with its early history. Use a topographical map of its site.

2. Biography of William Penn. The Quakers.

3. Growth of colony. Compare with that of the other colonies.

4. Geography of Pennsylvania; effects upon industries and social life.

References: Coolidge, *Early History of Philadelphia;* Fisher, *Early History of Pennsylvania;* Britannica article on Penn, *Harper's Magazine*, v. 65; Coffin, *Old Times in the Colonies;* Hart, *Source Book.*

Geography

Zonia Baber

Since the climate in this latitude renders field-work impossible for the greater part of the school year, it is necessary to have excursions whenever the weather is favorable. Hence, during May and June the seemingly logical year's outline will not be followed by consecutive lessons, but will be interspersed by lessons upon regions visited.

For instance, after a trip to Highwood, where glacial, stream, and lake phenomena are strongly shown, a discussion of the work of those agents was necessitated. But whatever part of the earth's surface is considered, the work of the physiographic agents must be understood in order to appreciate its topography. A student can appreciate with far more definiteness of concept the work done by the great rivers in China or India, for example, after a close study of streams in this neighborhood.

Several all-day excursions are planned for this month. One is to be taken to Barrington, Illinois, to study the glacial terminal moraine; another to Starved Rock, near Utica, Illinois, where erosive phenomena, certain rock formations, and interesting plant life are well illustrated. (The Indian history connected with this region furnishes an added interest.)

Another excursion, to be made by boat down the Chicago River and drainage canal, will afford an opportunity to study certain industrial, commercial, and sanitary aspects of Chicago and vicinity, besides the physiographic phase of the region. Another excursion to Dune Park is desired to note changes since the visit last autumn. Whenever it is possible, two or more excursions to the same or similar regions are highly desirable, since the average student is prepared by the first trip for a much broader appreciation in the second.

In the study of India, outlined below, the student will find Dune Park repeated in the Indian or Thur Desert; Starved Rock, with its physiographic and historic setting, is almost identically repeated in Chitor and Gwalior, and in many other localities.

The canal trip, from the sanitary standpoint, cannot find its reflection in the Orient, but for commercial consideration the search is not difficult.

What seems then, in a certain plan of study, to be an interruption occasioned by out-of-door work, is truly a means of illuminating the subject under consideration.

If the field-work were feasible at all times it would be easy to plan a year's course of study upon field observations; but unforeseen weather conditions, together with the long winters, necessarily confines the field-work to a few months at the beginning and close of the school year.

Pedagogic School: INDIA.

I. Influence of India on present international problems.

II. Conditions which have contributed to the development of the Indian civilization.

1. Location in relation to other nations.

2. Size and shape.

3. Topography; its influence upon climate; products and people; Peninsular region or Dekkan; Indo-Gangetic alluvial plain; Himalaya and Suliman mountains. (See physical map.)

(a) Mountains. Influence of Himalaya Moun-

tains, Aravalla Hills, Vindhya Range, Satpura Range, Western Ghats, Eastern Ghats.

(b) Rivers: Location and value of Indus, Ganges, Brahmaputra, Narbada, Godavari, Kistna, Cauvery. Which rivers have sacred influence? Which have delta plains? Which have valleys corresponding in shape to those of North Shore? Influence of Ganges delta plain on development of India? Commercial aspect of each of the above rivers. Use in irrigation.

4. Geology: Influence upon topography and products. Location and extent of alluvial, basaltic, and archæan formations. (See geology map.)

5. Rainfall and climate.

(a) Continental climate, December to May, during northeast monsoons. Effect of the Himalayas and Iran.

(b) Oceanic climate, June to November, during southwest monsoons. Effect of Indian Ocean.

(c) Account for cold weather, January and February; hot weather, March to May; rainy season, southwest monsoon, June to October; retreating southwest monsoon, or so-called northeast monsoons period, November to December.

(d) Effect of Himalayas, Western Ghats, Arakan Mountain ranges on rainfall.

(e) Locate areas of constant rainfall; areas of constant drought; areas of uncertain rainfall. Locate regions most liable to famine, and explain cause.

(f) Irrigation.

(1) Source of moisture: rain, rivers, underground reservoirs, lakes, and surface reservoirs.

(2) Locate regions where rain is sufficient for crops; "black cotton soil" regions, which act as sponge in retention of moisture; regions where wells are employed, where surface reservoirs are used. (See geological map.) Why are tanks and lakes generally in the archæan? Wells in the alluvial tracts? Why neither is necessitated in the trap area?

6. Crops.

(a) Food crops: wheat, rice, millet, barley, sugar, spices, etc.

(b) Oil seeds: linseed, rape, and mustard, castor, sesamum, ground nut, etc.

(c) Fibers: cotton, jute, hemp, rhea, silk, wool, etc.

(d) Dyeing and tanning materials; indigo, safflower, etc.

(e) Drugs and narcotics: opium, tea, coffee, tobacco, cinchona, Indian hemp, vines, and other sources of alcohol, etc.

(f) Miscellaneous products: cutch, lac, wild silk worms, india rubber, palm sugar, cocoanut, musk, myrobalan, etc.

7. Forests. Why has India a comparatively small area of forests? Locate regions where deodar, sal, teak, sandal, caoutchouc, prevail. (See forest map. *Statistical Atlas of India*, 1895.)

8. Animals—domestic and wild. Predominance of buffaloes and cattle in domestic use. Influence of religious beliefs in preserving wild animals.

9. Economic minerals. Locate regions which produce coal, iron, oil, and tin.

10. People. Race, appearance, dress.

(a) Cities. Account for few large cities in India. Contrast urban population of India 5 per cent with the urban population of England 53 per cent; meaning of each.

(b) Languages. Account for the existence of eighty languages in India. Where are the Dravidian languages principally found? The Aryan languages?

(c) Religions: Hinduism, Buddhism, Janism, Sikhism, Mohammedism, Animism, Christianity. (See map of prevailing religions. *Statistical Atlas of India*, 1895.) Effect of religions on industries, society, architecture, and art.

11. Political divisions. Bengal, Rajputana, Northwest Provinces, Panjab, Sind, Bombay Presidency, Madras, Haidrabad, Mysore, Travancore and Cochin, Kashmir, Assam, Burma, Nikobar Issakadiv and Maldiv Islands.

(a) Relation of native state to British government.

(b) Government of British India.

(c) Non-British states in India. Locate Portuguese India, French Possessions, Nipal and Bhutan. Why not under British rule?

12. History. Brief story of India. Compare with the history of China. Influence of religion on the lack of historic interest of the Aryan Indians. Has British rule been beneficial or detrimental to India? Why? What is your solution of the famine trouble?

Expression: Model, draw, and paint certain parts of regions visited. Model, draw in color relief map of India in dry and wet seasons. Draw a typical Asiatic Indian.

Materials: The subject will be illustrated by photographs, stereopticon views, products of India, manufactured and natural, books, and work of Indian school-children.

References: *Statistical Atlas of India*, 1895;

Mill, *International Geography*; *Stanford Compendium*, Vol. II; Reclus, *Earth and its Inhabitants*, Vol. III; Hunter, *The Indian Empire* and *Brief History of Indian People*; Murray, *Hand book of India, Burma and Ceylon*; Alfred Lyall, *The Rise and Expansion of the British Dominion in India*; Fergusson, *History of Indian and Eastern Architecture*.

Mathematics

George W. Myers

Pedagogic School

The pendulum of method in arithmetical teaching has swung from the extremely concrete to the extremely abstract within the last few years. The vibrations are moreover continuing at present, but with ever-decreasing amplitude. It is to be hoped that the damping effect of mutual criticism will in the near future enable us to fix our attention upon the position of stable equilibrium.

When this golden mean has been found we shall have learned how to secure to the pupil, in an economical way, the necessary knowledge of the laws and uses of abstract number without either hide-binding his thinking with a surfeit of abstractions, assimilable only by a mature mind, or lumbering his mental movements with a useless burden of devices for "concreting number" long after their period of serviceableness has passed. We shall then be able to admit that number is a purely "mental product, put into things and not got from them," and still to see that to use things and not to be used by them number *must* be put into them, and that for the bulk of our pupils a knowledge of number and its uses is of value in direct proportion to their skill in "putting it into things."

The school can render no more valuable service to society in general to-day than to discover a way in which the boys and girls who attend may be trained into a facile working knowledge of elementary mathematics. If this way could be found, mental discipline, the inducing of judgments of magnitude, culture, important as they all are in themselves, would come as by-products in the evolution of the child into the efficient man, who would be ready, because able, to perform the service our particular time demands. Such practical mathematics is needed in our business houses, with our railroads, and in our workshops, factories, scientific laboratories, on our farms, and wherever the great work of production is in progress—most of all, in the schoolroom.

The objection quite generally made to such mathematical work in the grades as elementary surveying, questions connected with simple systems of forces, is that it is not the purpose of the public school to teach professional knowledge. This objection can hardly prevail against the argument that useful knowledge will furnish as sound a basis for culture as will useless. Such work does not seek to train the pupil for a profession, but merely to give him an insight into the reality of the need for arithmetic, algebra, and geometry in modern life; to give a view of a fuller and more vital phase of need than is furnished by the keeping of accounts and the demands of general training.

The most formidable obstacle in the way of introducing such practical work is the inability of teachers to carry it out. Most grade teachers, being women, have not been under conditions which make the stress of the mathematical needs of the industrial professions keenly felt, and are likely to infer that there is no such need

which they can supply. This situation can and will be removed in time, though time will be necessary to overcome the inertia of present conditions. An influx into the intermediate grades of a large number of strong and wide-awake men teachers would go far toward relieving the difficulties of the present situation.

To the teacher of arithmetic, it is not so much a matter of choosing between the concrete method of presentation and the abstract method, both of which may be equally artificial, as it is of choosing between the natural method, based upon approximately real conditions, and the unnatural method, based upon purely artificial conditions. The chief advantage of number to man is to enable the mind to move faster, farther, and deeper into things than it can do without it. To hold the mind bound to things too long is to crop its wings and to compel it to walk when it might fly. The mental step from things to thoughts should be taken as soon as it can be taken surely, though no sooner. It is beneath the dignity of the true teacher to become a devotee and proselyte to any method, as such.

One function of number is not ordinarily considered, or is insufficiently considered, by elementary mathematical teachers: viz., its *use in indirect measurement.* As a matter of fact, in most cases where the mathematical need cannot be evaded, a magnitude is to be ascertained which cannot for physical reasons be obtained directly. It may be a line, obstructed by a hill, a building, a body of water; it may be the radius of the earth, distance to the sun, or other heavenly body. Difficulties arising from such sources are imperative in their demands for mathematics. Some related magnitude must here be measured and the desired one inferred through some known relationship. This is the greatest of all the uses of mathematics. Problems in elementary surveying furnish a good beginning for this sort of practice. Every grade teacher, beyond the fourth, should know something and teach something in this line.

The classes will continue the topographic map through June as occasion permits.

For classroom work the following outline will guide:

I. Quantity.
1. Constant; e. g., height of a tree at a given instant.
2. Variable; e. g., height of a tree at any time.

II. Number.
1. Constant, or fixed (arithmetical number).
2. Variable.

III. Constant quantity.
1. Origin, nature, and use.
2. How it gives rise to number.
3. Possibilities of constant quantity.
(a) May be subdivided, or parted; that is, may be measured.
(b) May be used a number of times; i. e., may be used to measure another quantity.
(c) Ideas of constant number and measurement arise from these two possibilities.

IV. Measurement.
1. Counting.
2. Direct measurement.
3. Indirect measurement.

V. Operations growing out of:
1. First possibility.
(a) Subtraction; unequal parts.
(b) Division; equal parts.
2. Second possibility.
(a) Addition; unequal addends.
(b) Multiplication; equal parts.

VI. Fractions, both common and decimal.
1. How and when taught.
2. Written forms.
3. Operations upon.

VII. Longitude and time and compound numbers.
1. How and when taught.

VIII. Percentage and simple interest.

IX. Geometry and algebra in the grades.

X. Discussion of place and relation of field-work in the grades.

Pedagogic Course in Nature Study

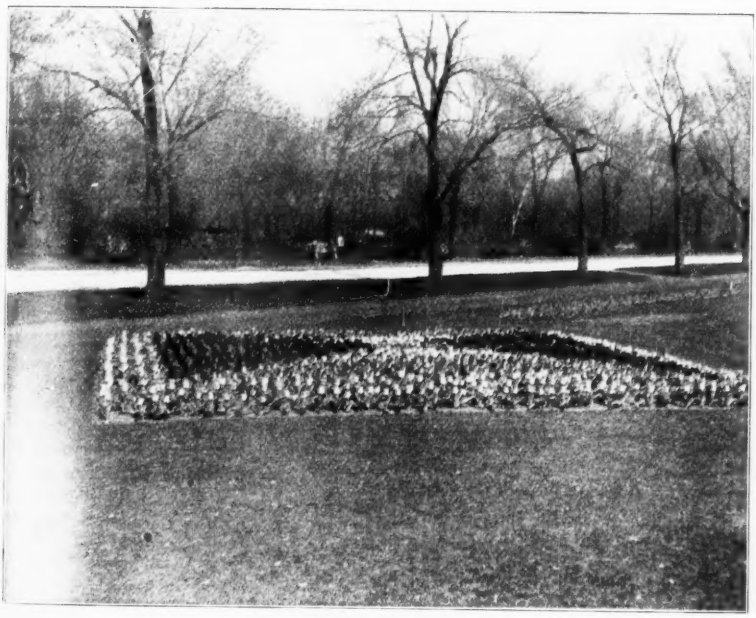
Charles W. Carman

LINCOLN PARK, MAY 11TH

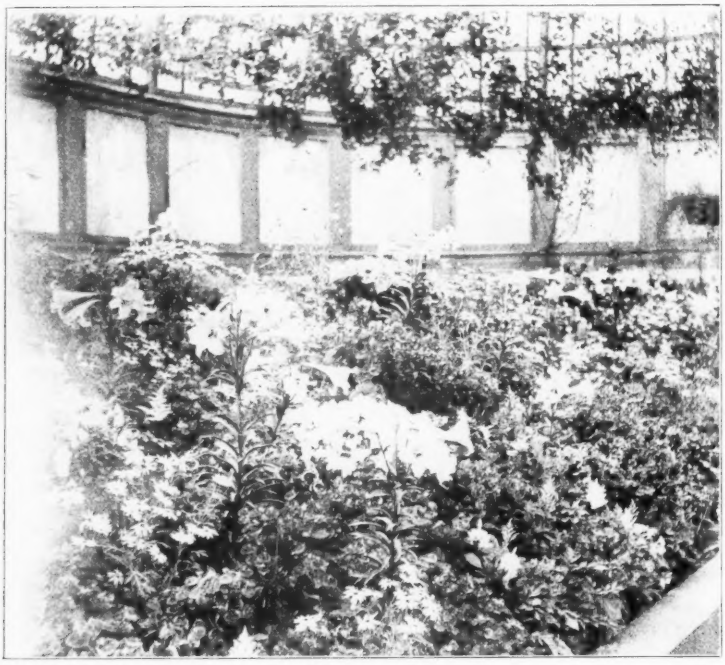
Owing to the continued cold during the month of April and early part of May, the development of vegetation has been unusually retarded. In order to prepare the student to see as deeply as possible into the extensive work of changing a landscape from its winter condition to that of a fully developed vegetation, it has seemed necessary to make a microscopic study of plant development. Accordingly, laboratory work has alternated with observations and sketches in Lincoln Park.

A quantity of spirogyra was gathered. The long cells were worked out under the microscope and sketched. The starch formations were identified, sketched, and tested with iodine. The fibro-vascular systems were then studied by teasing out bundles taken from the corn-stalk and celery. Long, slender tubes, with strengthened walls, were clearly seen by magnifying three hundred diameters. A quantity of sap was then expressed from a number of young corn-stalks, and gently evaporated until crystals were formed. These were examined microscopically and then subjected to Fehling's test for sugar. Starch was then changed to sugar by adding to thin starch paste a quantity of barley ground in a mortar. After standing in a

LINCOLN PARK, MAY 15TH



LINCOLN PARK, MAY 18TH



LINCOLN PARK, MAY 18TH

temperature of 80° to 90° for half an hour or less, Fehling's solution showed the presence of sugar. The reconversion of sugar into starch was shown by scraping bits from the potato and examining under the microscope. The grains were sketched and tested with iodine. The starch grains in wheat and corn were similarly examined and tested.

It is planned to follow the examination of the various structures of the plant, keeping constantly in mind the complete cycle of the plant's life. After completing some of the changes taking place in the leaf and stem, study was begun upon the roots. Cross sections were prepared and examined with the microscope. The seeds of the elm, maple, and box-elder were then collected, examined, and sketched.

Much of the time during the month of June will be spent in Lincoln Park *reading* into the vegetation the processes that were worked out in detail in the laboratory.

The theory continually held before the mind of the instructor, while developing the present course, may be formulated as follows:

1. The encouragement of accuracy in observation.

2. The cultivation of a desire to look beneath the surface of things in searching for truth.

3. The encouragement of a desire to collect a large number of accurate observations before attempting generalizations.

Speech, Oral Reading, and Dramatic Art

Martha Fleming

During the first half of last month, the pupils of the elementary school were working on the following programme, which was given to their friends. This was the culmination of their study on these subjects.

1. Spring Song ..... Caesar Cui
2. Julius Caesar. Act I., Scenes I. and II.
   ..... Seventh and Eighth Grades
3. Music .....
4. Rip Van Winkle ..... Fifth Grade

   A play arranged by the children from Washington Irving's story of Rip Van Winkle.

   Incidental Music { Grieg / Rheinhole
5. Hunting Song of Seeonee Pack ...
   ..... Eleanor Smith
6. The Adoption of Mowgli into the Seeonee Pack: A dramatization by the children from Rudyard Kipling's *Jungle Book* .....
   ..... Third and Fourth Grades
7. Earth's Resurrection, Trio..... Jasperson
8. The Sleeping Beauty, Pantomime....
   ..... First and Second Grades

   Prologue

   Scene 1. The Christening—Music.. Mendelssohn
   "Through the House," Trio ..... Mendelssohn
   Scene 2. The Enchantment—Music..... Wagner
   Song ..... Reinecke
   Scene 3. The Awakening—Music..... Rubinstein

   "And o'er the hills and far away
   Beyond their utmost purple rim,
   Beyond the night, across the day,
   Thro' all the world she followed him."
   —*Tennyson.*

The following is a report of a rehearsal taken from the Chicago *Tribune* of April 28th. It was written by Cora Handy of the Pedagogic Class.

Kipling's Jungle-Book Dramatized by School Children

At the Chicago Institute the children in the Third and Fourth grades have dramatized part of Kipling's *Jungle Book* as a part of their daily lessons. Not only is the story a new theme for dramatic form, but the method of procedure which the children have taken is decidedly novel.

The adoption of Mowgli into the Seeonee wolf pack is the subject that the boys and girls are representing. This is done in two scenes, the first being laid in father wolf's cave, where Mowgli obtains refuge from the tiger, Shere Khan, and the second scene is upon the Council Rock, when Mowgli is formally adopted into their pack by the wolves.

All of the work has been done by the children themselves, Miss Fleming and Miss Van Hoesen taking no more part in the various discussions arising than any of the children. In one way the story lessened the difficulties attached to dramatizations as a rule by the fact that the text is almost dialogue form in the original. The speeches are all taken directly from the book, with no additions, only an occasional cut being necessary.

First, the story was read to the children several times, as they were greatly interested and clamored for it again and again. The idea that they could act the story themselves came from the children. This was not their first experience of the kind, for the dramatic is one of the foremost modes of expression at the Institute. The children were quick to see the possibilities which the *Jungle Book* offers in this direction.

Each Wrote Drama

As they were all eager to carry out the idea, each one wrote out the story as he thought it should be acted, giving the speeches, stage setting, and costuming necessary. These were considered by the children, and finally together they reduced it to what they thought the best form.

After they had decided upon the number of scenes and their location, the first acting began, and the greatest enthusiasm was aroused. They wished every particular to be in full accordance with life, and necessarily this involved much labor, as Chicago boys and girls are not likely to know all the details necessary to represent wild animals in an Indian jungle. When the Kipling text would not help them, trips were made to Lincoln Park, where the animals were

interviewed personally as to their habits and characteristics. If a discussion arose as to just how a wolf sits, or if Baloo did not know exactly in what way to manage his feet, the children watched the bears and wolves in their cages. They learned many little mannerisms of the beasts in this way, too, and they are careful to represent these to make their story as complete as possible.

For Bagheera to make the panther's spring into the circle on Council Rock required much practice and frequent visits, but this has been accomplished in a truly panther-like manner. When Baloo addresses the wolf pack, speaking in favor of the "man's cub," it is easy to imagine a big brown bear really there. It was not easy for the children to decide which ones they thought were most fitted to take the various animals' parts, so each one took them all at different times and then they were able to judge from seeing many act.

Cave Made of Chairs

Four of the youngest children represent the little wolf cubs, and at the beginning of the scene they are asleep, huddled together with mother wolf, father wolf lying a little way from them, also asleep. As it grows dark they slowly awake, and father wolf announces his intention of going to hunt, when Tabaqui, the jackal, comes to the cave, made of chairs, and tells them that the terrible Shere Khan is going to hunt near there that night. The little boy playing Tabaqui scuttles across the floor in a fashion truly jackal-like, while the two older wolves glare at him, sitting wolf-like on their hind feet, while the forepaws are stiffened.

As Tabaqui sneaks out of the cave mouth the stranger in the classroom is startled by the tigerish howl of Shere Khan in the thicket near, which changes into a loud purr that seems to come from every side, ending with a howl which tells the wolves of the tiger spring and slip.

All the children are worked up to a high pitch when the tiger finally shows himself at the cave mouth, demanding Mowgli, who has entered there. Every muscle is tense, and tiger and wolf look at each other with most savage glares. Tabaqui's attitude behind Shere Khan is everything becoming a cringing jackal. It is remarkable how well the children adhere to the Kipling atmosphere.

The first scene ends as father wolf says, "But what will the pack say?" after mother wolf has sent away the tiger and has determined to keep Mowgli as one of her own cubs.

On Council Rock

In the second scene there are many more of the animals than in the first, for the scene takes place on the Council Rock, where every wolf has brought his cubs to the pack to be identified and adopted. The many cubs lie in the center of the group and their parents point them out with pride. The Lone Wolf, Akela, is above the rest on a rock, lying outstretched with his head upon his paws. The big brown bear, Baloo, as the teacher of young wolves, is the only other animal besides the wolves allowed at the council. He lies quiet until the discussion arises over Mowgli, when he arises to the occasion and speaks in his behalf. Mowgli himself is one of the younger children, and he sits playing with pebbles unconcernedly while the wolves debate about his life. Shere Khan is outside the circle, but he makes his presence known by trying to interfere with mother wolf's rights to keep Mowgli. The panther also is in the background; when he comes to buy Mowgli for a young bullock he leaps into the circle of wolves with catlike agility.

At their final giving of the scenes, next Wednesday morning, when friends can come to see them, the children will be dressed in skins and look much more like the animals they represent than ever in rehearsal. But they enter into the spirit of the story so heartily, and are so untiring in their efforts to have it lifelike, that it requires but the smallest bit of imagination to make the spectator believe that he is in the midst of the jungle in the middle of the night. The unhuman cries of the various animals might lead the uninitiated to think himself in close proximity to a zoo.

The Pedagogic classes attended rehearsals of the plays, and many questions arose which have been freely and fully discussed by them. Among these were the following:

What is the value of bringing the children's work to the state of perfection necessary for public presentation? Is it worth the time that must necessarily be given to it? Is it wise to interfere with the regular programme of the school for special training? What are the dangers to the school; to the individual? What is the effect upon the speech, voice, and movement of the children? Upon the reading? Upon the oral reading? Upon the usual morning

exercises? Upon the whole spirit of the school? Was it a unifying element? Were there any signs of self-consciousness in the children taking part?

It was decided that these questions could be answered only by watching the children and noting the effect upon their character and daily work.

As stated in the May COURSE OF STUDY, the members of the Pedagogic Class were asked to write recollections of the dramatic plays of their childhood; also observations on the plays of other children. A few of these are given as they were presented. Because of lack of space, and owing to the similarity of many of the experiences, only extracts are given from others.

I.

"As I recall my childhood, I have no recollection of any dramatic plays but those imitative of the life about me. The domestic and social life were the subjects of all my dramatic efforts. Of course the family play was the first of which I have any recollection, the father and mother and the children. Then there was the interminable exchange of visits, the interest of which was heightened by costumes, consisting of long skirts and bonnets, and even such realistic details as veils and card-cases. I can recall a most satisfactory sense of pleasure in the wearing of this costume, and in the actual going to the gate and walking up and ringing the door-bell. As I think of it now, I believe that was the nearest approach to dramatization I ever made as a child. I was always the same personage—a woman whom I very much admired.

"I recall a delight in being the mistress of the household and presiding at all functions, especially at the dining-table. I cannot say whether this was an evidence of the maternal or the 'bossing' instinct.

"In the home life the visits of the doctor, and the subsequent administering of medicine to unruly children, was a feature of play.

"I remember in a vague way of playing church, and later, school.

"All of these plays I suppose in a sense come in the category of dramatic play. I have no recollection of ever representing or being a character except in these plays.

"I have no recollection of ever playing or acting a story of any kind. I do not think any flight of that kind would have received any encouragement or even toleration. I never remember representing flowers, winds, or any such thing, and I did not hear the myths or fairy-stories until I was grown. And yet, with this statement of my own childhood, I want to give my recent experience. When I have seen the children in our own school here dramatizing their stories and acting scenes in their history and literature study, I have been conscious of a very strange feeling—and a feeling that is difficult for me to put into words. It was a recognition—a sudden and almost startling recognition—of an old something, a long-forgotten feeling of my childhood. I saw this feeling named. The thought that came to me when I first saw these children acting these little scenes was, '*There* it is! That is what that something was that I always wanted to do.' And I thought how I would have *loved* that when I was a child, and there was an intense realization of something that had been left out of my life.

"I give this experience of mature years as my reason and justification for giving children the opportunity for expression in dramatic representation."

II.

"Of my own dramatic experiences I remember very little, except that I loved to play that I was another person than my-

self. That person whom I imagined myself to be was always some one whom I had seen and very much admired, or some one whom I believed had everything that could possibly be desired to make her happy, as, for instance, a princess. I loved also to play that I was a mother of a family. I think that I never played that I was an animal, or personified any inanimate thing.

"I have watched with interest the intense life which one little boy lived in his make-believe world, from the time that he was three until five years of age. He played the greater part of the time alone, although he had two older sisters, and during that time he most often played horse. I have watched him when for hours during a day, and day after day, he would go up and down the road dragging a cart after him, prancing or running as nearly like a horse as possible, or he would stand at the post pawing the ground as if he were anxious to get away.

"One day he came into the house through the back door on his hands and knees. He did not say a word, but in some way he made us understand that he wanted a drink. He was not satisfied until the dipper was set on the floor in front of him, and he could drink after the fashion of a horse.

"That summer we went to the woods on a picnic. During the day L—— disappeared for a few minutes, but very soon we heard him loudly crying, and looking into the woods we saw him standing by a tree, evidently in great distress. We soon discovered the trouble. He had been playing horse, and imagined himself tied to the tree, and so strong was this imagination that when he became tired and wanted to get away, he thought he could not. He would not leave the tree, although we called to him to come, until his mother went through a process of untying him. Until she did, he really suffered.

"One morning he was just ready for his bath, when he made a sudden escape from his nurse and ran out through the open door into the yard, calling out at the top of his voice, 'Dis horsie got away wizout any harness on. Dis horsie got away,' etc. His nurse caught him, but she could not lead him back peacefully until she had put on him an imaginary harness.

"One day we sat down to dinner, and a platter with an unusually large fish upon it was placed before his father. L—— looked at it intently for a minute, then folded his hands, gave a little sigh, and said, 'Mr. Fis', we're about to eat you.'

"At night, after he had gone to bed, two or three times he called the bears to come and get him, as if he dared them to. Then he broke down and cried, fearing they might really take him at his word."

III.

"South of my home was a little slough, which was frozen in winter. I enjoyed walking up and down upon the ice imagining the ice was the pavements and the banks were the rows of houses in the streets of Boston. I had never been in Boston, nor in any other large city. I do not remember where I had heard of Boston, nor what I really knew about it. I was always alone when I played this.

"In the spring and summer I played in the orchard. I sat under the trees and imagined they were the homes of people who had the same names as the trees, and the same characteristics as the trees and apples. For instance, the snow apple-tree was a wide-spreading tree, with low branches, bearing apples with very red skins and very white pulp. Mrs. Snow was a short, stout woman, wearing a cotton dress and white apron; she had red cheeks, was always mild but jolly, not very quick-witted—a motherly woman. Her daughter, Emma, was a slight little girl, with very,

very white skin, red cheeks, blue eyes, and brown hair which curled. I can remember the appearance and characteristics of four other tree-women, but Emma Snow is the only child I ever named, although there were children in the other tree homes.

"This play was carried on for whole seasons, and, I believe, from year to year. My solitary play is that which I remember most vividly."

IV.

"Philip used to make believe that he was a bird and chirp. At times when playing this he would refuse to talk, saying that he was a bird and could not talk. He tried to peck up crumbs. He used to make believe that he was a cat and try to lap up milk or water as they do.

"He was very often an engine and when this was the case, he made the noises of the whistle and the bell. Then he was the whistle or the bell, and at the same time the whole engine. Sometimes he was a whole train, and at the same time the brakeman calling the names of the stations.

"My brother and I used to play that we were wild animals. Our cave was under the table, or sometimes we made a cave of chairs turned sideways. Often one of us would be a hunter and shoot a bear—one of the others. Then the bear would be carved and eaten, and immediately afterward return to life and become another bear. Sometimes we were lions and wolves.

"We used to go fishing often, the fishing-rod being a cane. As soon as the fish was landed, he would jump out of the boat and become another fish."

V.

"A little three-year-old girl once said to me, 'Now you be mamma, and I'll be papa, and I'll go to town while you stay at home and get dinner.'

"She then proceeded to hitch up a chair for a horse, and a very unruly one it proved to be, judging from her efforts to keep it under control. After some moments I made a remark to her, when she answered indignantly, 'Don't talk to me; don't you know that I am four or five miles away—almost up to Ottawa?'

"A certain little boy announced one day when about four or five years of age, 'Well, I want to be God, so I can say to things to *be* and they'll *be*.' One day he was found perched up on a slight elevation, from which he looked down on a little brother who waited for his commands, such as, 'Let the little boy run,' 'Let the little boy be still,' etc.

"The following took place among a company of blind children: They were found chasing around in great confusion, evidently trying to keep away from one grotesque little figure, who reached out after them and made a hissing sound. The teacher caught him and asked what they were playing. 'Oh!' said he, 'we are playing hell, and I'm the devil—don't you hear 'em sizz-z-z?'"

VI.

"I do not remember dramatizing any stories before I was old enough to read them for myself. Then we read stories for the sole purpose of playing them. We would never play if any one could see or hear us. We were rather afraid that some one would make fun of us.

"From the age of ten to fourteen we played constantly, whenever we could go to any part of the house where we would not have an audience.

"We often played the same thing over and over for three or four hours at a time, and every day at that.

"Our favorites were such books as *Swiss Family Robinson*, the *Elsie* books, and stories of girls who went to boarding-

schools, and who got into all sorts of mischief. We two were apt to be five different characters in a single hour.

"In the evening, when we studied our school lessons, we were always girls (with high-sounding names), who were at boarding-school. I shall always remember the intense pleasure we derived from these plays. We often wondered if other children ever played in this way, and great was my surprise when I first heard it mentioned in this school that it was natural for all children to do so."

VII.

"Most of the stories told me were Bible stories, and I had a feeling that they were 'a thing apart' from everyday life. However, I never hesitated to play church and Sunday-school, and one time added the Lord's supper to my church service, being in turn minister and congregation. I played this only once; those in authority over me forbade a repetition.

"One feature of our 'church' play was a source of amusement to our mother, and the greatest delight to us. That was the music, or rather the hymns.

"Words and music were of our own composition, and the result, if not musical, was unique. We also 'created' the words themselves. They were weird enough, being, as nearly as I can recall them, something like this:

"'Geegobor'nē äshanēstō!
Ängemē'son nēshtebō!'

"I am sure we were as tender-hearted as children usually are, but our grief over the death of a baby chicken, a kitten, or a canary bird, was by no means inconsolable when we considered the possibilities there were in a funeral."

VIII.

"We used to dramatize Louisa Alcott's plays. The landing on the stairs was our stage. We often took plays in which there was a prince. We also used to play boarding-school. I did these last two when I was about fifteen years old."

IX.

"When I began going to school I played school at home, in season and out of season. Myself and playmates took turns in being teacher. The two things we enjoyed most were thrashing the pupils if we were the teacher, or speaking the pieces if we were the pupils. I have wanted to be a pedagogue ever since that time.

"One thing I used to do a great deal, when alone, was to take objects, such as thimbles and spools, play they were people, and then make them act parts. In this way I acted out many phases of the life going on around me. Some of these little dramas were love stories, and I remember how keenly I used to feel the parts I was having these objects act.

"For several mornings this last week I have noticed the children in the primary grades of the Institute in their free play in the gymnasium. They have made a boat out of the benches and other material, using the wands for oars. It really looked very much like a boat. Some of the children were passengers, others were the different officers of the crew."

X.

"One of our favorite games was convent. We usually played this on Sunday afternoon. In this game we were all nuns, and we would go into a dark closet and stay a long time praying. The floor, we said, was made of stone, and we must kneel there for twenty-four hours, until our sins had been forgiven.

"I think that the game I liked the best was dressing up in my mother's old clothes and playing that I was a peddler or gypsy woman. I was always very fond of dressing

up in any kind of costume and imitating people."

XI.

"I delighted in fixing up a chair or a table to look like a piano, and in sitting and playing by the hour. I would hold my head as I had seen musicians do, and would try to move my fingers as they did. I think there really was music in my soul, as I played the part of the musician day after day."

Art

John Duncan Antoinette Hollister Clara Isabel Mitchell

PAINTING BY STUDENT OF SECOND GRADE

We print drawings from the various rooms of the school.

The First Grade is represented by two pictures of the Lake Bluff region, done on a recent excursion, and one of a scene from the story of the Sleeping Beauty. The Third and Fourth grades collected the wild flowers upon the same excursion, and made very excellent pictures of them afterward. Unfortunately these drawings suffer in reproduction by the loss of the color.

The Fifth Grade who enacted the story of Rip Van Winkle before the school, a short time ago, have made a series of pictures of the various incidents of the story. These pictures are at a large size, and are executed with colored crayons on a gray paper. The two accompanying drawings on page 882 give some suggestion of them.

The cut on page 883 represents Sir Bedivere's last look at Arthur as he sails away to Avalon. It is the work of a student in the Seventh Grade.

The girls of the High School, in connection with their work in Home Economics, are interesting themselves in ornamental needlework, and the beautiful design which serves as our frontispiece represents their efforts.

The scarf border in silk needlework, on page 883, is designed and executed by a member of the Pedagogic Class, and from

PAINTING BY STUDENT OF SECOND GRADE

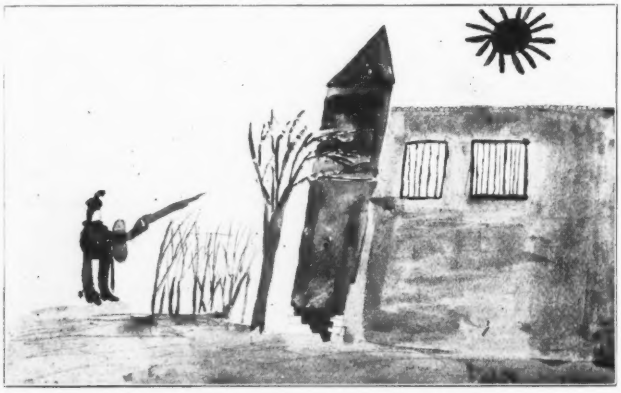
the same class we give one or two sketches of the animals in Lincoln Park, and a drawing of Hercules wrestling with a sea monster.

Pedagogic School: In our work illustrative of literature we shall pass on to Mediæval stories. The stereopticon will be called into service to steep the students in the ideals of Gothic and early Renaissance art from Byzantine times to Angelico and Botticelli. We shall try to analyze the particular characteristics of each artist as we go along, making a study of his methods and of his personality—his individual spiritual quality.

We shall deal especially with St. George and the legends of the saints. (For fuller outline see the July COURSE OF STUDY.)

References: Grant Allen, *Paris;* Spenser's *Faery Queen;* Mrs. Clement, *Handbook of Legendary and Mythological Art.*

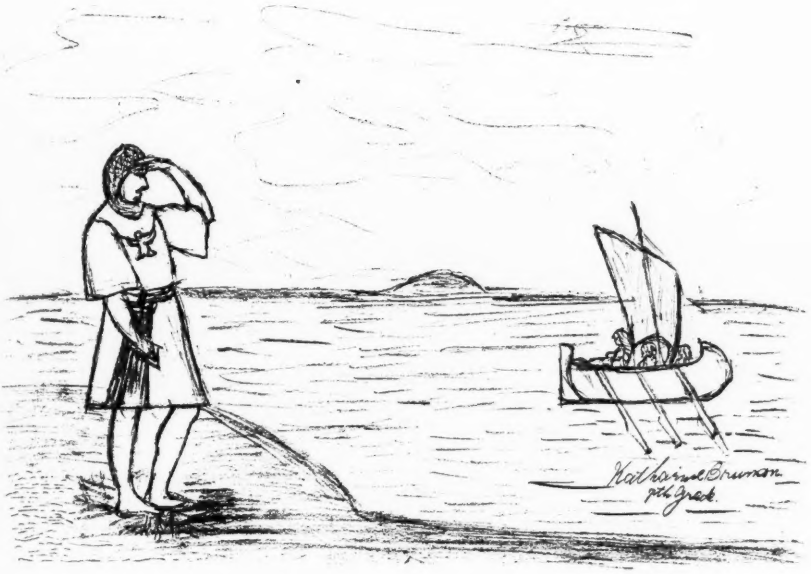
The sketching class will go forth to capture the busy life of the streets. It seems to us that this is the best way to direct and to hold the attention to the facts and the aspects of contemporary history, and to accumulate a store of vivid mental pictures to be worked over, arranged, and explained under the guidance of the historian and



PAINTING BY STUDENT OF SECOND GRADE

DRAWINGS BY STUDENTS OF THIRD AND FOURTH GRADES

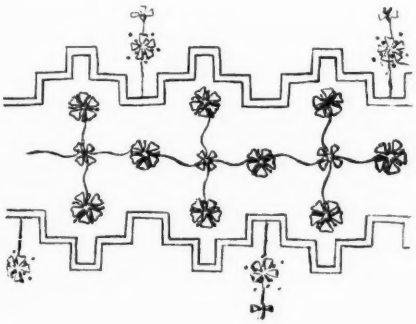
DRAWINGS IN COLORED CHALK BY STUDENTS OF FIFTH GRADE

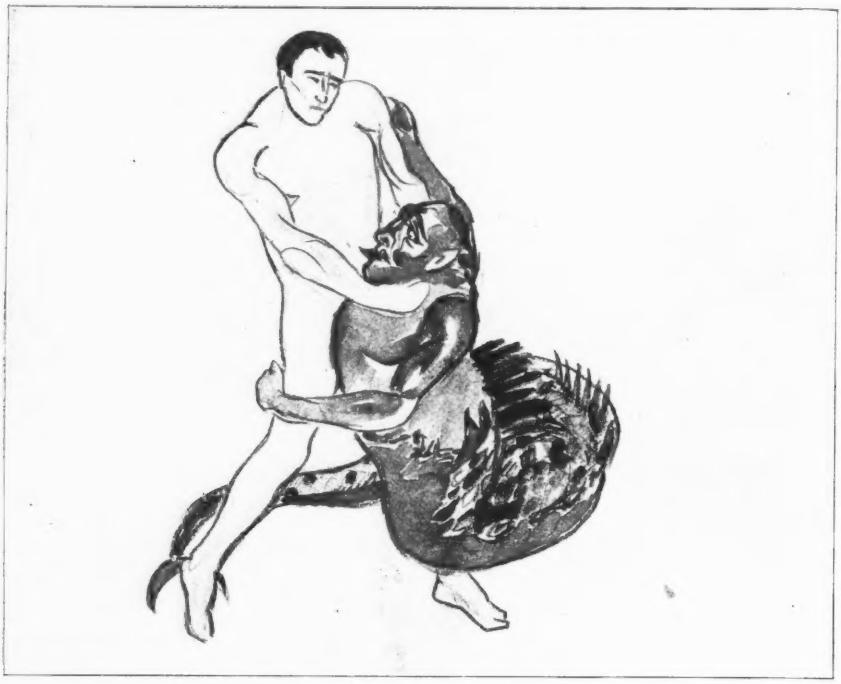


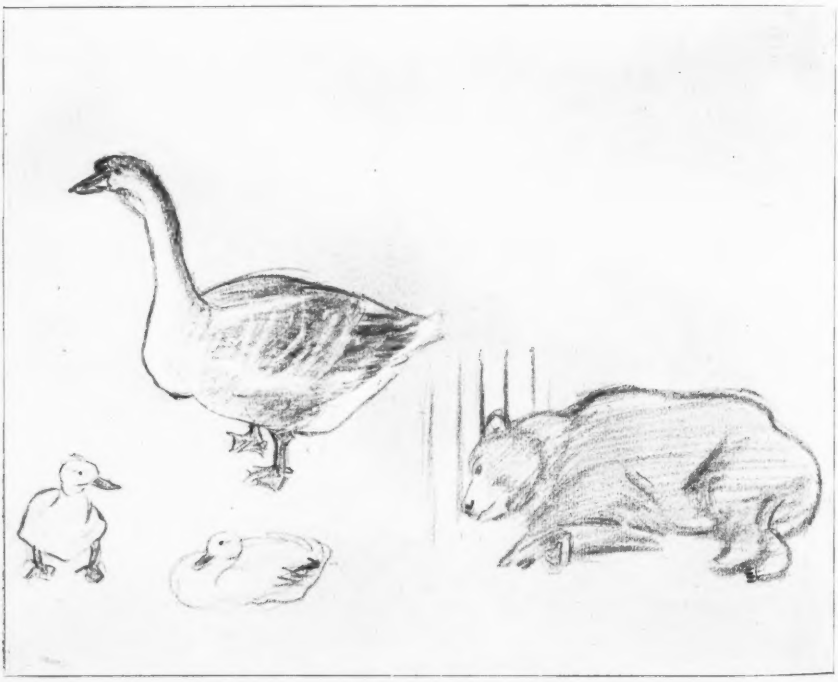
DRAWING BY STUDENT OF SEVENTH GRADE

sociologist. We shall thus be doing in a reasonable and educative way what the illustrated newspapers do in a haphazard and empirical way.

City conditions, traffic, transport, manufacture, building, agriculture, lumbering, mining. (For fuller outline see July number of the COURSE OF STUDY.)







DRAWING BY MEMBER OF PEDAGOGIC CLASS

Physical Training

Carl J. Kroh Caroline Crawford

Free Gymnastics (*continued*): (CARL J. KROH.) Third order. Procedures observed in the arrangement of lessons are based on the principles applied in preceding orders. The more or less formal routine, however, of a suggested order of exercises is modified by methods employed to enhance the pupil's interest in gymnastics. The teacher's interpretation of immediate or ultimate aims, or of the general or specific purposes of a lesson, prompts the method best calculated to enlist the pupil's interest throughout the development of the lesson. His function shall be to estimate and determine the physiological as well as the psychological order of the respective exercises and sequences with reference to their best effects. The pupil's power to do will constantly modify such orders. A judicious employment of mechanical laws in a gradient development of movement forms, insuring constant progress within proper limitations, implies a careful preparation of lessons of this order. The study of similar and dissimilar combined movement forms and their proper order and modes of execution with reference to direction in the different planes, etc., is important in a consideration of characteristically even results. Pupils should be led to recognize the teacher's "theme" or leading thought in a lesson, and to share the interest in its development.

Methods vary. A lesson or order may embrace a series of exercises devised according to certain rules insuring accuracy of execution (study of similar and dissimilar movement forms), or it may consist of an "addition" of supplementary movements to complete some preconceived activity; or, again, it may consist of an uninterrupted performance of exercises, a "chain of exercises," calculated to bring into use all parts of the body in successive order, and to be practiced rhythmically without pause, the commands for each exercise being given during the execution of the preceding exercise. Of the various methods, the order of "theme" work is the most interesting.

The selection of a "theme" is considered the first step in the preparation of a lesson under this order. Its final form, not infrequently, is determined only after a careful study of the requirements of a lesson embodying the kind and form of movements and exercises suggested. The work consists of exercises and the various forms of combinations of exercises stated in the "theme." Beginning with the simpler exercises of the arms, legs, and trunk in the fundamental or characteristic standing position it gradually leads to the complex forms of a lesson, a combination of the activities suggested. Thus, also, various forms of activity may be considered in the choice of the "theme," as suggested for instance in the attitudes of the "Discobolus," the "Gladiators," the swimmer, the wood-chopper, the mower, etc.,—the complete activity being first resolved into its parts, as it were, in the fundamental or required standing positions, and finally combined as a whole with its accompanying changes of positions. In the work of this part of the lesson each position is taken at command as described, whereupon its repetition from two to six times follows in rhythmic order.

The "theme" or lesson proper, so-called,

is preceded by an introductory drill designated as "corrective" or "preparatory."* This part of a lesson consists of movements taken from the lesson proper, and supplemented at need by movements not found in the "theme." These movements are in the main executed at command only, and are not to be executed as rhythmic exercises. They follow in the order of head, shoulder, arm, trunk, and leg exercises, and are to be executed with the greatest accuracy.

Lesson Order: Order, tactic, exercises.

Corrective or preparatory drill—elementary order as a basis. (Movements taken from the "theme"—lesson proper—needed movements inserted.) Movements commanded.

Theme. Exercises executed in rhythm.

Supplementary exercises. Tactics, etc. Breathing exercises.

The regular gymnastics of the High School and Grammar Grades were discontinued at the end of last month. An illustration of the regular order of work, consisting of free exercises, light gymnastics, apparatus work, and games was given during one of the morning periods usually devoted to general exercises.

The physical tests and measurements, to be taken during the week preceding the close of the school year, will be the subject of a future report.

Field excursions and general outdoor recreation on the lakeshore and on the fields of Lincoln Park will be the order during the remaining weeks of the school year.

*Corrective movements are chosen to secure proper poise of the body toward an easy and graceful carriage. The term "preparatory drill" is used in the sense that the respective movements gradually prepare the pupils for the more difficult work of the lessons. The correct execution of all movements occurring in a lesson is an aim of this part of the lesson.

Individual Gymnastics

CAROLINE CRAWFORD

The following outlines, given for physical measurements, examination, and diagnosis, are tentative in character. At present they form the basis of the work relating to causes which may affect the child's growth and development. The present emphasis is toward the relation between nutrition and condition. It is evident that much study is needed to gain a better knowledge of the effect of different forms of nutriment upon the child; also, under what nutritional disadvantages, due to physical history, inheritance, and disease, the individual is placed.

PHYSICAL MEASUREMENTS.

Name.....
Born.....
Nationality.....
Father.....Mother.....
His " .....Her " .....
" Mother..... " Father.....
Occupation (Father).....
Resemble.....
Rate of growth previous.....
Parents' Report (See Book —, pp. —).
Physician's Report (See Book —, pp. —).
Remarks.....
.....
.....

PHYSICAL MEASUREMENTS.

AGE..... DATE.....
AGE..... DATE.....

Weight			Girth, forearm, R		
Height, standing			" " L		
" sitting			" wrist, R		
" knee			" " L		
" pelvis			Depth, chest		
" sternum			" waist		
Girth, head			" " head		
" neck			Breadth, head		
" chest			" neck		
" " full			" shoulders		
" ninth rib			" waist		
" " " full			" hips		
" waist			Length, shoulder-elbow, R		
" hips			Length, shoulder-elbow, L		
" thigh, R			Length, elbow-tip, R.		
" " L			" " " L.		
" knee, R			" foot, R		
" " L			" " L		
" calf, R					
" " L					
" ankle, R					
" " L					
" instep, R			Cap. lungs		
" " L			Strength, forearm, R.		
" upper arm, R.			" " L		
" " " L.			" chest		
" elbow, R			" back		
" " L			" legs		

PHYSICAL EXAMINATION.

NAME .....

AGE ..... DATE .....

Head	Forward, back, right, left.
Neck	Large, small. right, left.
Shoulders	Forward, down, right, left.
Scapulæ	Prominent, high, down. right, left.
Arms	Triceps, biceps; extensors, flexors.
Hands	Right, left.
Chest	Flat, prominent, hollow, center, right, left.
Sternum	Short, long, depressed.
Ribs	Prominent, depressed, center, right, left.
Abdomen	Prominent, depressed.
Waist	Narrow, flat, deep.
Back	Straight, round, hollow.
Spine	Prominent, curved, right, left, anterior, rotation, cervical, dorsal, lumbar.
Hips	Broad, narrow, down, high, right, left.
Thighs	Flexors, extensors.
Leg	Flexors, extensors, bow, knock-knees.
Instep	High, low.
Feet	Flat, right, left.

PHYSICAL DIAGNOSIS.

NAME .....

AGE ..... DATE .....

Head.
- Eyes, right ..... Left .....
- Ears, right ..... Left .....
- Mouth .....
- Throat .....

Thorax.
- Heart .....
- Lungs .....

Abdomen.
- Stomach .....
- Liver .....
- Intestines .....
- Kidneys .....

Pelvis.

Standing.
- Head .....
- Chest .....
- Hips .....
- Poise .....

Food, amount.
- Proteid .....
- Fat .....
- Carbo-hydrate .....
- Water .....

Blood.
- Corpuscles .....
- Hæmoglobin .....

Urine.
- Quantity .....
- Quality .....

Skin.
- Condition .....
- Color .....
- Texture .....
- Eruptions .....

Muscles.
- Condition .....
- Character .....

Fat.
- Quantity .....
- Character .....
- Fatty degeneration .....

Diseases.
- Nervous .....
  - Postures .....
  - Action .....
  - Expression .....
- Chronic .....
- Contagious .....

Organization of a Library

Irene Warren Frances Simpson

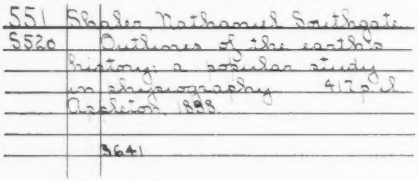
The general principles of cataloguing and the various kinds of catalogues in use at the present time in typical libraries were defined in the May number of the COURSE OF STUDY. The purpose of this paper will be, therefore, to give in brief and simple form the actual method of making a card-catalogue.

Materials: The guides, inks, pens, and penholders desirable for making library records have already been discussed in a former outline. (See COURSE OF STUDY, January, 1901, p. 427.) If the cards in the catalogue are written, great effort must be made to secure legibility, and to that end all shading and unnecessary strokes should be omitted. A plain, vertical writing will make a neat and legible catalogue. If a typewriter is used, one with a card attachment is best, as ordinary correspondence rollers do not hold heavy cards with sufficient firmness. A black record ribbon should be used which should be changed whenever the entries show the slightest signs of becoming faint. Stiff white cards suitable for cataloguing purposes can be obtained at various prices from office supply firms.

Entries: In general, each book in the library is entered twice in the catalogue; under the author's surname, called the main or author entry, and under a subject, called the subject entry.

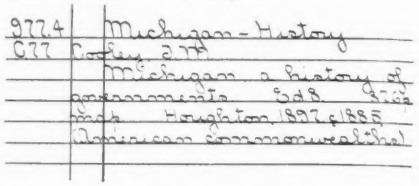
Methods of Making Entries: Enter all

books under the surname of the author, followed by the forenames in full. The author entry is written on the top line, beginning at the first marginal line. On the line below the end of the author entry, beginning at the second marginal line, is written the title of the book exactly as it appears on the title-page, except that the article in English is usually omitted and capitals are used only for the first word and proper names and their derivatives. In the case of a long title, omissions, indicated by three dots (. . .) may be made. Following the title and separated from it by 1 cm. (⅜ in.) is written the imprint consisting of the edition, paging, or number of volumes, illustrations, portraits and maps, place of publication or publisher, and date, with the name of the series to which the book belongs, if desired. The accession number is written in the lower left-hand corner in black ink and the call number in the upper left-hand corner in red ink. The word which most accurately describes the subject-matter of the book is written as a subject heading on the reverse of the card in red ink and on the first line of the subject card also in red ink. The library should keep a list of such subject headings as are used, and should add to their number as fast as new ones are needed, taking care never to employ synonyms, but making a reference from each synonym to the heading actually used.



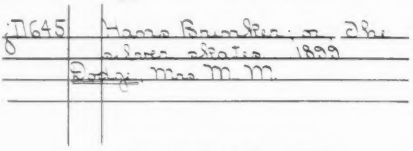
Facsimile of Author Card
Actual size 7½x12½ cm.

Subject Entry: The subject card is an exact copy of the main author card, except that initials may take the place of the author's forenames. The subject heading is written on the top line in red ink, beginning at the inner marginal line. The accession number is always omitted.



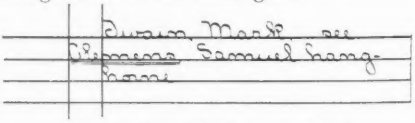
Facsimile of Subject Card
Actual size 7½x12½ cm.

Title Entry: All works of fiction, plays, single poems published separately, and books with striking titles should be entered also under their titles. A short form of the title is used, written on the first line, beginning at the inner margin and followed by the date of publication. The author's surname, with initials, is written at the outer marginal line, and the call number in the upper left-hand corner.



Facsimile of Title Card
Actual size 7½x12½ cm.

Reference Cards: The cataloguer should refer freely from pseudonyms to real names, from other forms of spelling to the one adopted, and in general should leave no device untried which may help to an intelligent use of the catalogue.



Facsimile of Reference Card
Actual size 7½x12½ cm.

Arrangement: The arrangement of the cards in the catalogue drawers should be strictly alphabetical, and the case should be provided with a rod in order to make the cards entirely secure. Manila guides

(see the COURSE OF STUDY, January, 1901, p. 427) should be inserted to facilitate the use of the catalogue, and each drawer should be labeled.

An inexperienced cataloguer can often be greatly assisted by consulting the printed catalogues of other libraries, and noting the form of entry adopted. The Cleveland Public Library has issued a dictionary catalogue in a bound volume which is for sale. The Milwaukee Public Library also sells its catalogue. The Bureau of Education will send free on application the catalogue of "A. L. A." Library, 5,000 volumes for a popular library shown at the World's Columbian Exposition. This is in pamphlet form, and should by all means be secured, as it will be found most useful.

References: See COURSE OF STUDY for May, 1901; also Dewey, *Library School Rules and Simplified Library School Rules;* and A. L. A., *List of Subject Headings.*

Literature for the Primary Grades

Gudrun Thorne-Thomsen

Pedagogic Class: As stated in the May number of the COURSE OF STUDY, stories, presenting different types, are given this month.

The Pancake

Once on a time there was a woman who had seven hungry children, and there was an old man in the house, too. One day the goody was frying a pancake for them, and the children stood round about, and the goodman sat by and looked on.

"Oh, give me a bit of pancake, mother, dear; I am so hungry," said one child.

"Oh, darling mother," said the second.

"Oh, darling, good mother," said the third.

"Oh, darling, good, nice mother," said the fourth.

"Oh, darling, pretty, good, nice mother," said the fifth.

"Oh, darling, pretty, good, nice, sweet, mother," said the sixth.

"Oh, darling, pretty, good, nice, sweet, clever mother," said the seventh.

So they begged for the pancake all around, for they were so hungry and so good.

"Yes, yes, children; only wait a bit till it turns itself." She ought to have said, "till I can get it turned," for when the pancake heard this, it turned itself all of itself, jumped out of the pan, sprang out on the floor, and rolled off like a wheel through the door and down the hill.

"Halloa! Stop, pancake!" and away ran the good woman after it, with the frying-pan in one hand and the ladle in the other, as fast as she could, and her children behind her, while the old man limped after them, last of all.

"Hi! won't you stop? Seize it. Stop, pancake," they all screamed out, one after the other, and tried to catch it; but the pancake rolled on and on, and in a twinkling of an eye it was so far ahead that they could not see it.

So when it had rolled a while it met a man.

"Good day, dear pancake," said the man; "don't roll so fast. Stop a little and let me eat you."

"Oh, no, if I have run away from the good woman, the old man, and seven hungry children, I may well run away from you, Manny Panny," said the pancake, and rolled on and on till it met a hen.

"Good day, pancake," said the hen.

"The same to you Henny Penny," said the pancake.

"Pancake, dear, don't roll so fast; wait a bit and let me eat you up," said the hen.

"Oh, no, if I have run away from the good woman, the old man, and seven hungry children, and Manny Panny, I may well run away from you, Henny Penny," said the pancake, and so it rolled on and on like a wheel down the road.

Just then it met a cock.

"Pancake, dear, don't roll so fast, but wait a bit and let me eat you up," said the cock.

"Oh, no, if I have run away from the good woman, the old man, and seven hungry children, and Manny Panny, and Henny Penny, I may well run away from you, Cocky Locky," said the pancake, and off it set rolling away as fast as it could; and then it met a duck.

"Pancake, dear, don't roll so fast, wait a bit and let me eat you up," said the duck.

"Oh, no, if I have run away from the good woman, the old man, and seven hungry children, and Manny Panny, and Henny Penny, and Cocky Locky, I may well run away from you Ducky Lucky," said the pancake, and with that it took to rolling and rolling faster than ever.

So when it had rolled a long, long time it came to a brook, and the poor pancake could not get over.

Just then it met a pig.

"Good day, pancake," said the pig.

"Good day, Piggy Wiggy," said the pancake.

"If you would like to get over the brook, just seat yourself on my snout," said the pig, "and I'll carry you over."

So the pancake did that.

"Ouf, ouf," said the pig, and swallowed the pancake at one gulp; and then, as the poor pancake could go no farther, why—this story can go no farther either.

The preceding story is a type illustrating the simplest fairy-stories, and follows the nursery rhymes in the order of significance. In the same class belong: *Chicken Licken Who Thought the Sky had Fallen Down; The Death of Chanticleer; The Greedy Cat; The Sheep and the Pig Who Set up House.*

One step in advance of these, with more plot and of more significance, the following may perhaps serve as an example:

The Three Billy-Goats Gruff

Once on a time there were three billy-goats who were to go up to the hillside to make themselves fat, and the name of all these three was "Gruff."

On the way up was a bridge over a brook they had to cross, and under the bridge lived a great ugly Troll, with eyes as big as saucers, and a nose as long as a poker.

So first of all came the youngest billy-goat Gruff to cross the bridge.

"Trip, trap; trip, trap!" went the bridge.

"WHO'S THAT TRIPPING OVER MY BRIDGE?" roared the Troll.

"Oh! it is only I, the tiniest billy-goat; and I'm going up to the hillside to make myself fat," said the billy-goat, with such a small voice.

"NOW I'M COMING TO EAT YOU UP," said the Troll.

"Oh, no! pray don't take me. I'm too little, that I am," said the billy-goat; "wait a bit till the second billy-goat Gruff comes, he's much bigger."

"WELL! BE OFF WITH YOU," said the Troll.

A little while after came the second billy-goat Gruff to cross the bridge.

"Trip, trap! Trip, trap! Trip, trap!" went the bridge.

"WHO'S THAT TRIPPING OVER MY BRIDGE?" roared the Troll.

"Oh! it's the second billy-goat Gruff, and I'm going up the hillside to make myself fat," said the billy-goat, who had not such a small voice.

"NOW I'M COMING TO EAT YOU UP," said the Troll.

"Oh, no! don't take me; wait a little till the big billy-goat Gruff comes; he is much bigger."

"VERY WELL! BE OFF WITH YOU," said the Troll.

But just then up came the big billy-goat Gruff.

"TRIP, TRAP! TRIP, TRAP! TRIP, TRAP!" went the bridge, for the billy-goat was so heavy that the bridge creaked and groaned under him.

"WHO'S THAT TRAMPING OVER MY BRIDGE?" roared the Troll.

"IT'S I! THE BILLY-GOAT GRUFF," said the billy-goat, who had a big loud voice of his own.

"NOW I'M COMING TO EAT YOU UP," roared the Troll.

"WELL, COME ALONG! WE WILL SEE ABOUT THAT." That was what the billy-goat said; and so he flew at the Troll, and tossed him out into the brook, and after that he went up to the hillside; and so

"Snip, snap, snout,
This tale's told out."

There are a few misconceptions abroad as to the use of the story in the education of children. First, that the story, more than anything else, cultivates the imagination. The study of science, geography, history, or mathematics is just as much a reconstruction of new images as is the imaging of a most fanciful story.

Imagination is simply one of the mental processes by which all knowledge is gained, and is, therefore, only a means to an end.

A second fallacy is that the story may be applied like a plaster or medicine for moral weaknesses. Often teachers and mothers ask: What stories shall I tell to my boy, who is not always truthful? or who is selfish, etc. Nothing but work which calls forth truthfulness, and conditions which give opportunity for unselfishness, can help such a child. The story may inspire and awaken noble impulses, but will become worse than useless unless the child finds all around him chances to act on these impulses.

There must be no gap between storyland and the actual world in which the child lives; when the emotions are aroused, such as courage, kindliness, pity, self-sacrifice, the child must find something to act upon, something in his daily work that requires these qualities.

An apparent enmity exists between science-teaching and story-telling. The child's relation to nature around him is an intimate, personal one. Hills, forests, streams, and flowers become his friends, and inspire him with love and confidence.

As the child grows older, and his scientific knowledge of the world increases, this feeling of friendship toward nature is intensified. He begins to see the relation of nature to all life, and to understand some of the immutable laws underlying the whole universe; from an entirely subjective point of view, the child by the help of science is able objectively to regard nature without and nature within self. There is no break between the mythical stage and the science stage, only an evolution of ideas; the true story spirit toward nature is never lost, but runs into a wider channel, giving color and emotion to scientific realities. To use Stanley Hall's illustration of the tadpole's tail: "Since the tadpole loses its tail, anyway, we might reason that it is not needed, and might just as well be cut off; but then it would be rather hard on the tadpole." In the same way, if stories are taken out of child-life, it will be crippled and deprived of that which is necessary for subsequent healthy growth. It is to be hoped that side by side with science-teaching the myth will maintain its place, not as an antagonist,

but by its spirit a faithful companion, supplementing and enriching the other.

It is a fallacy to believe that science needs to borrow the fanciful dress of the myth; it can well stand alone and hold its own. This sugar-coating of scientific facts so common in our day, shows the inability to understand child-nature. Three-fourths of the so-called science reading for primary pupils consists of such material as the following:

"Some tired little raindrops were resting in the grass.

"'Come with me and have a dance,' said the bright, sweet sunbeam. 'But you must put on your white dresses first,' and she kissed each one on the cheek.

"Then suddenly they felt themselves so light, and danced merrily high up in the air. But what should happen? Mr. Northwind was out for a frolic, too, and when he met the little vapors, which we now must call them, they grew so cold that they had to put on warm winter clothes," etc.

Such reading matter a healthy child naturally resents, and however well intended, it appears just as silly and affected to him as it should to us.

Of late, efforts have been made to select appropriate myths to correlate with science work. In this attempt the teacher has often yielded to the temptation of reading into the myth scientific truths that are hardly suggested by the original, or to so adapt it as to emphasize and reinforce scientific statements.

It must always be kept in mind that the myth is a very partial scientific truth, and cannot, therefore, give expression to the modern knowledge of science.

Mention may be made here of the modern made-up fairy-stories. It is not easy for us grown-up people to become like children again, or to put ourselves into the child stage of the race, so as to produce real fairy-stories. So we find in such stories a tendency to preach, an over-accentuated moral teaching, and the conscious analysis and philosophy of the adult, merely disguised in fairy-story clothes.

As to interpretation of the story, it goes without saying that the children should not be asked or forced in any way to interpret the deeper meanings of the story, so as to become conscious of its teachings.

Summary of the Technique of the Work in the Primary Grades

Flora J. Cooke

Certain subjects of study have appeared each month in the outlines of the COURSE OF STUDY. These were selected because they promised direct points of contact and interest for the children of a particular grade at a particular time. They were selected, also, because of the known experiences of these children—for the amount of educative work and individual effort which they required — and for the possibilities which they contained of exerting a wholesome influence upon the class. As the teacher's preparation, however, was made a month before the time for actual teaching, there were always many changes necessary, for in each case the immediate demands of the children governed the work given, and not the COURSE OF STUDY. The chief value of this method of planning is that it adds to the experiences of the teacher, and shows her her own faults in judgment, which she is bound to investigate as she compares the prophecy with the actual work done.

The grade outlines have only emphasized the reasons for choice in the work, and suggested the possible material or apparatus necessary to its performance. The training or formal side of the work has not appeared prominently in the monthly plans. It seemed feasible, therefore, to sum up the year's work from the standpoint of technique in the June issue of the COURSE OF STUDY.

I. Number: The children in the primary grades have had no number for the sake of the number alone, but they have been constantly planning, making, comparing and judging, estimating and verifying, so that the number work has come into daily use. The work has been so planned that each month has presented new difficulties, new facts, or a new process, and care has been taken *at the time when that fact or process was a necessity* to have it understood and made ready for automatic use.

The June work will include a series of tests in the form of games to see what the children have gained (incidentally, as far as they were concerned) of the so-called facts and processes of arithmetic through their actual use in the necessary imaging required by their work.

II. Reading: Reading has been used as a means to an end, not an end in itself. It has been a direct help in bringing the children into contact with good things in nature, literature, and with simple history pertaining to or explaining phases of their social life.

1. The reading lessons, selected from supplementary reading books or prepared by the teachers, might be classified under one of the following heads: (a) Reading lessons which place before the children for their consideration their various experiences and observations in a subject—the chief requisite of such lessons being that *something new* come to the children as the result of the review. (b) Lessons which give data or useful information. (c) Lessons which present a simple, concise plan of work. (d) Good and beautiful descriptions of something within their own experiences or power of comprehension. (e) Educative stories.

2. Vocabulary. New words have been

functioned through their use. That is, a word was presented to a child only when it was necessary to him for his expression.

As a material or object was used, and the child discovered what it was, its name was written upon the blackboard, that, at the time of greatest interest he might associate the written form with the thing it symbolized. This method of word-learning means economy of effort, and diminishes the necessity for drill. The words gained in this way, and words constantly used which had no intrinsic meaning, such as conjunctions, prepositions, etc., were placed by the children in dictionaries which they made, so that they might find and spell the words correctly when they needed to use them independently. The words thus functioned and placed in dictionaries during the first year would probably average for normal children about three hundred, and they do not differ to any great extent from the words in the ordinary First Reader.

Through this training, the children in the Third and Fourth grades are able to use small pronouncing dictionaries.

III. Writing: There has been no writing without a distinct purpose, and but little drill. The children have constantly written records, recipes, plans of work, letters, and stories. As many children in the primary grades had already acquired bad habits in the cramping of the hand, and in position of body, they have done much writing upon the blackboard and upon large paper fastened to the tops of desks, which they are able to raise to any angle desired. The demand has been to make the writing as free, rapid, and legible as possible.

IV. Spelling: The effort has been to establish *habits* of correct spelling—every dictionary lesson and every written lesson has been also a spelling lesson. Oral spelling has been used only when some special occasion demanded it.

V. Language: Every good lesson in any subject has been also a lesson in language. The motive has been to have the children form habits of clear and correct expression of thought. The standard placed before the child has been that of making himself understood in the best and most economical way. Beauty in expression and individuality in style have been encouraged in every way possible, and the ideal has been held of accepting only the best expression of which the pupil is capable.

Rule for Teachers (Colonel F. W. Parker): "Whenever a rule of syntax, a grammatical term, definition, inflexion, conjugation, or punctuation mark can be of immediate assistance to a pupil, it should be given, explained, and used until its use becomes automatic."

Suggestion (Colonel F. W. Parker): "Habitual mistakes of children which have been acquired through imitation can be corrected only by the continual use of the correct form."

Notes on a Trip to Highwood

Harriet T. B. Atwood Bertha Payne Alice G. Kirk

The whole school recently took a trip to Highwood. Before going, the First and Second grades talked over the things they might see on the journey. They made little books, heading each page with the printed names of things they were apt to find there.

As some of the Second Grade could not go, members of the class talked over what

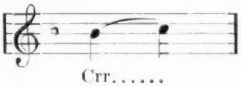
might be done to give to these children a good picture of Highwood. A building-up in miniature of this region was decided upon. Two children were chosen to draw a background on large sheets of gray paper with colored crayons. In the foreground, on a sand table, the children are using all the material brought back with them, such as stones, soil, plants, etc., to help build up the best possible representation of the region visited. The books in which their notes were recorded, together with the above work, developed the following descriptions, which were written at home. They have had no correction except the misspelled words which are italicized.

The study of birds has been continued in Lincoln Park and the Academy of Science, where we have recognized the same birds seen at Highwood. In the park we have imitated the bird notes, and the children have suggested words which they imagined the birds had in their songs. This roughly represents the notes as the children heard them. Their imitation is much more accurate than any that can be given on the staff.

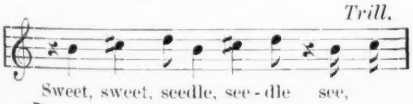
Bird Notes

The crow sat upon a tree near us, saying:

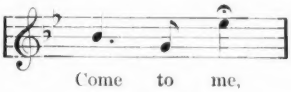
We heard the blue-jay at Highwood. He seemed to say:



The yellow-breasted warbler flew from branch to branch, singing:



We heard the wood-thrush in Lincoln Park calling:



Papers Written by the Children

I.

DOW HARVEY

(Seven years old—First year in school)

We took the train to Highwood.

Then we went to the ravine.

It has tall hills on each side.

There is clay and leaves in the ravine.

It is in the woods.

There are flowers on each side.

We followed the ravine to the lake.

We jumped across the stream and over logs and branches.

After we got in sight of the lake we saw tall clay cliffs with the ravine running between them and a nice sand beach.

The cliffs are tall, high, clay things, and they are cracked all over.

There is a place where the clay comes over the sand.

When we wanted to get upon the top of the cliff we had to climb through a gully to get to the top.

We tried to throw stones down without having them touch either side.

II.

MARGARITA BINDER

(Eight years old—Second year in school)

First we took the train at the Northwestern depot.

We hardly rode a little way when we saw some flowers, but we could not stop to pick them because we were in a great hurry.

We passed some trees, but we could not see what kind they were, as the train was going so fast.

We passed lots of other things.

Pretty soon we came to Highwood, and there we left the train.

Then we walked a little way, when we saw some violets and other flowers, but Mrs. Atwood told us not to pick them, as they would wilt before we got home.

Then we came into the woods, where we saw some lovely flowers, and afterward we walked to the ravine.

We found dried leaves and clay there.

There was a hill on either side. Then we sat under a tree and ate our lunch. In the ravine and on the hill were fine trees and lovely blooming bushes, and Mrs. Atwood told us to find the mouth of the ravine.

We went over hills and fallen-down trees until we got to the mouth of the ravine, where it was sandy, and we found it turned into a lake. Here we drew some pictures with colored chalk.

III.

GLADYS GANSBERGER

(Second year in school)

We picked up some buttercups when we went to Highwood.

We went up a hill and then we came down and we saw a ravine right down *below* us.

And there was some grass there and Miss Hollister sat down on the grass. We *laid* down our lunch-boxes and then we went up another hill.

After a little we ate our lunches and Margarita and I were above the hill and the sunflowers *were* right in back of us.

There was a bush right in front of us and it had yellow blossoms on and we saw some violets all in a pack and the ravine was very muddy.

We enjoyed the trip.

I thought that the violets and white trilliums were the prettiest flowers I saw at Highwood.

I saw sunflowers, too.

IV.

MAY PEABODY

(Ten years old—First year in school)

Fourteenth of May we took the train to Highwood.

At Highwood we walked along a road until we came to a big bridge and then we went down a little path and there was a stream.

On each side was clay and flowers. Big slopes rose up on each side of the stream. On the slopes were beautiful flowers.

Trees bent so far over that they looked like they were going to break right in two.

Margaret and I walked up the slopes and there we found a big patch of violets: they were so beautiful.

Miss Hollister, Mrs. Atwood and some of the Second Grade and some of the First Grade stopped below. Margaret, May Hune, and I went up the slope and there we ate our luncheon at the foot of a big oak tree.

In front of the oak there was a big cluster of bushes. We all ran into them and they were just full of wake-robins. We gathered a *handful* of them and then we went down to Mrs. Atwood and showed her the wake-robins and then all our flowers we put in our lunch-boxes.

All the pretty spring flowers were in blossom.

They were so beautiful.

Reading Lessons for the Primary Grades

Literature Series No. 12

Flora J. Cooke

Birds

The Mole and the Lark

(Adapted from Hans Andersen)

It was autumn. The leaves were falling and the cold winds had begun to blow. Many birds had gone South, but one little lark had broken her wing and could not go. Her nest had blown away, so she had no home. It began to snow, and the poor little lark was frightened indeed. After a while she saw an opening in the ground and hopped into it.

She found herself in a long, dark hall, but she hopped on and on, dragging her broken wing.

At last a strange voice stopped her. "Who comes here? What do you wish?" it said. It was so dark that the poor lark could not see who spoke to her. When the glow-worms came with lights she trembled with fear, for she saw an old mole and all of his family. But she bravely told her sad story, and begged to stay a while in the mole's home.

"You may stay," said the mole, "and since birds sing, you may sing to us for your living."

Though they did not understand the ways of the lark at all, the mole household were very kind to her and she stayed all winter with them.

All the songs that she knew were about the trees or the sunshine.

The mole did not like these songs. "Those songs are foolish,' he said. "The sun is not beautiful Its light hurts my eyes."

"Then what shall I sing about?" said the poor lark.

"Sing about my soft fur," said the mole, "or sing about our fine store of food."

The little lark felt sad; but she wanted to please the mole. She knew that he could not see the sun, and she felt very sorry for him.

All winter long she made new songs. She sang of the mole's home and his fur and his children. The mole understood these songs and liked them.

"You must never leave us," said he.

"You are very kind," sang the lark. "I thank you with all my heart."

But she longed all the time for the bright sun. Her wing was now well again, but she did not think of leaving the mole.

One day she saw a beam of light at the end of the hall. She hopped toward it faster and faster and soon she was out in bright sunlight again.

The snow had gone. The grass was green, and the flowers were blooming. The lark forgot the darkness and the mole. She flew high in the sky, and sang with great joy. Many friends heard her voice and followed her.

"She sings better than ever," they said. "Her voice is sweeter. "Tell us where you have been all winter, friend Lark?"

The lark sang to them all her songs of the mole, of his food and his fur and his children. But the larks did not understand these songs.

"Don't sing of darkness and stupid old moles," they said. "Sing that song of the sunshine. That was beautiful."

And the little lark did sing it. She sang it better than any one else.

The Birds of Killingworth

(Adapted from Longfellow's Poem)

It was spring in the little town of Killingworth. The grass was green and many flowers were in bloom. The trees had new leaves and the spring birds were singing in the trees.

Flocks of crows were settling near the corn-field. "Last year the crows ate much corn," said the farmers. "The other birds ate the fruit and grain. We will not bear it. We will protect our crop," they said. So they called a great meeting.

They decided that all birds should die. One thoughtful man tried to save them, but the farmers said: "Why should we listen to him? The birds are our enemies. They must die!"

So all the old birds were killed, and the little ones starved in their nests.

Then summer-time came. The air was still and hot. No birds sang sweet songs. The farmers had forgotten one thing. A great many insects soon came. They ate all the leaves and flowers, so that no grain or fruit grew.

It was a sad, sad summer.

Oh, how the people wished for the birds! They longed for their sweet songs. They were quite willing to give them their share of food.

The next spring a great wagon came into Killingworth. It was covered with green branches and vines. Among the branches were many cages full of birds.

The children shouted with joy when they saw them. They opened the cage doors and set the birds free. They flew singing to the trees and built new nests.

That was a happy summer in Killingworth.

Buds

Science Series No. 7

Flora J. Cooke

(NOTE: Record of a first-grade class of children in May, 1894, upon the opening of buds on trees in the park surrounding the Normal School. Children will compare this with their records for this year.)

We began looking at the buds on the trees in March.

We did not find any open buds then.

All the buds were small and black.

One day we found little green points in the end buds on the willow tree.

After a while we found green points in the ash-leaf-maple buds.

In April we found green points in the buds on all the trees.

Then the buds began to open.

The ash-leaf-maple buds opened first.

Just the buds on the ends of the twigs opened.

Now the willow tree has more open buds than any other tree.

All the open buds are on the sides.

The end buds on the willow tree are not alive now.

They were alive in March, but they were very small and thinly covered.

We think a frost must have killed them.

The oak buds had the thickest coats.

Nearly all the trees have leaves now.

Flowers came on our crab-apple tree before the leaves came.

Catkins came on our cotton-wood tree before the leaves came.

We think the oak-tree leaves are the prettiest.

They are a soft light green or red.

The buds on the oak tree opened the first week in May.

Trees

The trees need water.
The trees need soil.
The trees need heat.
The trees need light.

The trees give beauty and shade.
They give fruit.
They give wood.

Questions

Do the trees give most or take most?
Do the trees ever give heat or light or soil or water?

A Tree Rhyme

"If all the trees were one tree,
What a great tree that would be!
And if all the seas were one sea,
What a great sea that would be!
If all the axes were one ax,
What a great ax that would be!
And if all the men were one man,
What a great man he would be!
And if the great man
Should take his great ax,
And cut down the great tree,
And it should fall into the great sea,
What a splish splash there would be!"

The Water System of Chicago

(Adapted for Third Grade)

Geography Series No. 2

Gertrude Van Hoesen

It was the year 1863, and the city of Chicago was growing larger and larger. Before this time the people had obtained their water from the Chicago River, and from that part of the lake near the shore. Now the sewers emptied into the river and the river emptied into the lake. This made the water very impure.

In cold weather minnows, alive and swimming, came from every faucet. The water tasted and smelled of fish, and one had to look twice in his glass to see that he did not swallow one alive. Visitors from other cities made fun of us, and said that they would not live in Chicago, for the water was so impure.

Chicago was then the largest city in the West. It had many railroads; people were still coming from other cities; many grew rich; there were schools and churches, and the people numbered 350,000. The citizens became tired of the poor water supply, and said that something must be done.

Most of the men were away as soldiers in the war, but those who were at home were trying to find a way of getting pure water. Many plans were made, but were of no use. To be sure, there was plenty of pure water in sight, for it was found that Lake Michigan was as clear and cold as crystal about two miles from the shore. But the problem was, "how to get the water to the shore." A plan was thought of by Mr. Chesbrough, the city engineer, and we shall see how this plan was worked out.

The Crib

Nearly thirty-six years ago some men in Chicago thought of doing a strange thing. They thought of building a house out in Lake Michigan. It was to be a house that people could live in. It had to be very strong, for the wind blows hard out on the lake, and the waves are always dashing about and tugging and pulling. They never seem to be tired. It would not take them long to tear down a house no stronger than ours are.

What is it that makes a house firm and strong? It is the foundation which is laid several feet down in the ground. Was it not strange for these men to think of building a house out where there was no ground for a foundation? The water was deeper than some of our houses are high. Many people laughed at these men and said they could not do it. But these men were wise, and they were determined to carry out their plans. They went to work in this way. Since there was no ground for a foundation, they decided to make the ground. They decided to make an island in the lake.

First they made a curious box-like building. This they built on the shore near the river. It had five sides. Because it had five sides we call it a pentagonal building. This pentagonal building was nearly as large as the Palmer House. It had three strong walls, with a space of three feet between them.

Many tons of iron bolts were used to make the walls strong. Its floor and walls were covered with tar, and all the little cracks were stopped up. When little cracks are stopped up in a vessel, we say the vessel is caulked. Ships are tarred and caulked when made ready for the sea. Now do you see what these men were going to do with this building? They were going to float it right out on the lake.

When, after many days, the building was finished, crowds of people gathered to see it launched. They cheered again and again

as it moved slowly down the bank of the river. It was moved on rollers, just as houses are moved. Finally it floated in the river. Tug-boats fastened ropes to it and puffed away, drawing the huge box behind them. On and on they went for miles. They stopped where the men wanted the island to be. Then they did something that will surprise you. They opened doors in the sides of the building. What happened then? It sank to the bottom of the lake. But it was so high that several feet remained above the surface of the water.

Then they brought a great many stones on boats. They thought a stone island would be stronger than an earth one. They put the stones in between the three walls of the building. They filled it up to the top. But they wanted a well on the island. They left a round hole in the center. They put a big iron cylinder in this hole. Stones were put in all around it.

Do you see how they had made a strong island? They had made a well, too. Now they had the island to build the house on. They built a nice, large house on it. Everybody was glad the men had done what they had determined to do. There was great rejoicing in our city.

The island and the house together were called the crib.

What was the well for? We shall find out another time.

The Tunnel

The cylinders of the crib opened into the tunnel, which was sixty-nine feet below the level of the lake. The tunnel was five and one-sixth feet high, five feet wide, and two miles long. The men who worked in the tunnel were miners and bricklayers. One party of men started from the crib and dug towards the shore, and another party started from the shore and dug towards the crib. The men were in this great hole for three years.

Although the men were jolly most of the time, yet they were always in fear. They thought of the terrible place they were in,

with Lake Michigan over them. Their only light was from small lamps carried in each man's hat. What if the earth should cave in? Often they could hear the paddle-wheels of a steamer as it passed over their heads.

One day a hole was made, through which water began to drip into the tunnel. The men fled in terror, but soon returned, fixed the hole, and went on with their work. Sometimes they found gas in the gravel. After lighting this, they ran away until it had burned out, for it was very dangerous. Many visitors came, which greatly pleased the men. Whenever a person went into the tunnel, he had to put on a suit of old clothes. Little mules hitched to cars carried the visitors through the gloomy place. Many pieces of clay were carried away as souvenirs.

Steadily the two parties worked towards each other. On the 24th day of November, 1866, the morning papers said that they had but a thin wall of clay between them. The great question was, "Will they meet or will they pass each other?" The joy of the citizens was great, but that of the miners was greater when they found that they had met within the space of an inch. The men shook each other's hands, and loud shouts and hurrahs were heard on every side. Had they not reason to rejoice, when they had done the work which the world said could not be done?

When the tunnel was finished, it was joined to a large well in the city, which was under a building called the "Waterworks." This building had large pumps which pumped the water from the well into a reservoir. From the reservoir it was forced into large pipes which were laid under the streets of the city. Smaller pipes were joined to these large ones, and these carried the water into the houses. The faucets were turned, and the people received their water without any trouble.

The Kindergarten

Anne Elizabeth Allen

The two following stories will be used in connection with our spring work in the Kindergarten:

The Three Neighbors

Once upon a time there were three hens who had their nests side by side in the chicken-house of a large farmyard.

Mary was the name of the little girl who took care of them, and who had named them, and she fed them every day.

"Top-knot" was the name she gave to the old black mother, who was rather cross, and not a very good mother or neighbor. "Brownie" she called the little yellowish brown hen, who was a good mother but not a very kind, good neighbor. The third one of these three neighbors she named "Speckle," on account of her black and white spotted feathers—and *she* was the loveliest, kindest mother and the best neighbor there was anywhere about the farm.

Springtime had come, the nests were made, and the eggs were in them. On the nests, covering the eggs close and warm, sat the three mothers, waiting for their babies to peck the shells and come out.

It seemed as though eggs were never so long hatching, and the poor mothers were beginning to be anxious to get off their nests. At last, one warm, sunny day, Mother Speckle thought she heard a shell crack in the nest, then another and another. She peeped into her nest, and sure enough, out came ten little yellow heads, and soon she was walking proudly off with them to the barnyard.

Brownie began to be a little troubled, and Top-knot scolded outright: "Haven't we been sitting on our eggs quite as long as Speckle?" said she, "and haven't we just as much right to have our chickens hatch as she has?" But scold as she would, her eggs would not hatch.

Brownie's eggs cracked one by one in a few days, but even if only five of them did hatch, with so small a family she was glad to follow Speckle with her brood into the barnyard where all the other chickens, ducks, geese, and turkeys went every day to be fed.

Each morning when these two mothers came out they passed old Top-knot and stopped to talk with her. Speckle offered to sit on her eggs for her while she watched the little chicks, but poor old Top-knot was too cross to even feel her kindness, and still sat on.

One morning there was a little sound in Top-knot's nest that made her jump. "At last," thought she, "I am going to have my family"; but only one little brown, ugly, top-knot chicken came out, and the mother sadly led it out to the barnyard. Speckle was so glad to see them that she would not even notice that Top-knot had only one chicken and that such an ugly little fellow, but tried to cheer her up and make her happy.

Brownie looked at the little chick and walked away, making Top-knot feel worse than ever.

One morning when little Mary came into the barnyard she found that one of the mother hens was dead, and had left five little new baby chickens in the grass, all wet and cold and hungry. "What shall I do with them?" said she. "They need a

mother to care for them." She thought of Top-knot with her one little chicken, and hurried to find her, with the five little motherless chickens in her apron. She found her after looking a long time, and stooped down near her dropping one little downy, yellow puff-ball gently beside her on the grass. Old Top-knot clucked an angry cluck and pecked at it. Mary knew there was no use trying to leave them, so she hunted up Brownie, who, you remember, had but five chicks, and five more, Mary thought, would make her a very nice family.

Brownie was scratching with her little brood over in the orchard when Mary found her and tried to leave the little orphans with her. The first little chick that she dropped Brownie did not notice, so she dropped a second one, but the mother hen drove it away, and Mary knew she must hunt up old Speckle and add five more to her large family.

Stooping beside Speckle, Mary dropped down one little one, and Speckle kept on clucking and scratching; she dropped another and Speckle kept on scratching,—she dropped another, but the mother still paid no attention until the five orphan chickens were with her ten children, when she clucked and walked off happily with them. How glad Mary was to find such a good friend for the poor little babies who were without a mother or any one else to care for them.

When Speckle with her large family went back to her little coop that night, Top-knot said, "Where did you get all those extra chickens? Oh! you took the orphans, did you? I wouldn't have them with my little one."

Old Speckle said not a word, but gathered the fifteen little ones closely under her warm mother wings and took the best care of them that any loving mother could. Day after day she helped them to scratch and earn their own living, and never seemed to know the difference between her own and the little adopted children. Brownie took care of her five little ones, day by day, and went often with Speckle to see poor Top-knot whose one little chicken had fallen into a slop-bucket and been drowned before any one could get it out.

Top-knot seemed to grow crosser and crosser, until Speckle little by little got her to help with the fifteen little ones. She would never sit on any eggs again, but was always ready to do what she could for Speckle, who hatched out so many chickens that year and always did what she could to make Top-knot happy. When the barnyard grew too full of chickens, Mary would sometimes sell off some, but never could she make up her mind to give up any of Speckle's chickens, for like their good mother, they were always the best of mothers and neighbors.

ANNE E. ALLEN.

Carl and Ponto

Away off on the seashore, in a dear little white house, lives Carl Seymour with his mother and father.

He has no brothers or sisters, but the nicest, queerest little playmates live all around him, that he loves and cares for, and I am going to tell you about them.

His father told him that if he would get John, the man, to help him bar off a corner of the fence, he should have a family of pigs to live there, and if they would put up a close fence, that he should have whole families of ducks and chickens to live behind it.

For days they worked, and soon had the homes ready, and Mr. Seymour got the pigs and chickens and ducks, and Carl cared for them and fed them every day.

On top of a tall post they built a tiny house; that was the home for two pigeons,

who came to live there, and Carl thought he was as happy as he could be.

At last he had another playfellow given him, whom he grew to love better than any of the others.

This one was Ponto, a great, shaggy, Newfoundland dog,—with a white shirt front, white stockings, and two great, loving, brown eyes. He used to come under Carl's window every morning and say, "Bow-wow-wow!" ("Carl! get up!") Out of bed Carl would spring and hurry down to have a race before breakfast, and feed all his pets, while Ponto went along to help carry the food.

One morning Carl opened his eyes and looked around. It was queer, he thought, that he had not heard Ponto. He lay wondering, when — listen! what was that? Could it be Ponto's whine that he heard? He jumped up and ran to the window. There, just below, on the ground, lay Ponto, with his foot hanging limp by his side. He had broken it coming through the gate. Carl rushed downstairs, telling his mother as he went of the accident, and calling to John and his father to come and help him.

Mr. Seymour and John soon carried Ponto in and put him on a nice soft rug.

Little Carl was very, very sorry, but Mrs. Seymour comforted him as she bandaged up the poor, hurt leg, telling him that Ponto would soon be well if they took good care of him. Ponto licked Mrs. Seymour's hand to thank her. Carl saved the nicest bones and the juiciest meat, and took Ponto his meals, staying with him while he ate, and doing what he could for him.

In a short time Ponto was again able to run around, for his kind friends helped him to get well. How he and Carl did enjoy the long runs to the postoffice, so far away, where they went every day for the mail! Ponto was the postman, and always brought home the letters safely in a little mail bag that Mrs. Seymour made for him.

You know they lived on the seashore, and in the warm summer-time these two playfellows loved to take a dive and swim in the great ocean. Carl had a little bathing suit that he used sometimes to put on down at the water's edge, leaving Ponto sitting on the shore to take care of his clothes. Ponto was sitting there watching Carl away off in the water, one day, when he saw a great tall wave coming. Carl's back was turned to the wave so he did not see it. Ponto barked and tried his best to tell him by running up and down on the shore, but Carl did not notice him.

The big wave came nearer and nearer until it dashed over Carl.

Ponto did not wait; he leapt into the water and struck out in great sweeps for the place he had last seen Carl. The waves came high, and it was very difficult to swim against them, but he knew he must work hard, for Carl was in danger. He looked for some sign of Carl, but nowhere could he see even a speck on the water.

He was getting very tired, when away off he saw a tiny dark spot on a wave. He swam up close to the spot, and found that it was Carl's brown, curly head.

He knew that now there was harder work than ever to do. He caught Carl by the little bathing suit and began to swim with him toward the shore. Would he be able to carry Carl so far? Would his strength hold out? He swam until he was almost tired out, battling with the waves and carrying such a heavy burden.

At last he reached the shore, and dropping Carl he ran barking to the house.

Mrs. Seymour ran with him to where Carl lay. She was frightened indeed, and caught him in her arms and carried him home. They worked with him for a long time and rolled him up tight and warm in his little bed.

Ponto sat watching with his great brown eyes fixed on Carl's face, and at last saw Carl's eyes open just a tiny bit. He wagged his tail and gave a little joyful whine. Soon Carl opened his eyes wider and looked at him. Ponto jumped up and licked his hand, and ran around and around looking so happy that Carl could not help smiling at his funny way of telling his joy. When Ponto heard the dinner-bell ring, he hurried down and sat waiting for something.

Mrs. Seymour could not think at first what he wanted, and asked him, but Ponto wagged his tail and looked at the table; then Mrs. Seymour thought that maybe he wanted to take Carl's dinner to him, as Carl had done when Ponto was hurt.

She asked Ponto. He ran to the table barking and jumping up and down, saying "yes" as plainly as a dog can.

She put Carl's dinner in a little basket, and Ponto carried it up to him, and every meal-time found him at his post ready for the basket. He was such a good nurse that Carl did not mind staying in bed half so much as he would have done without him.

Soon Carl grew stronger, and was able to get up and play, and it was not long before they were out in the fields running and playing again, better and truer friends than ever before, loving each other more every day.

ANNE E. ALLEN.

First and Second Grades

Harriet T. B. Atwood

Nature Study and Geography: The work during June will be centered in the field-trips taken by the children.

Field-trips proposed:

1. Visit to the Desplaines River at River Forest.

2. Visit to the ravine at Lakeside and the prairie west of Lakeside.

3. Visit to sand dunes at Dune Park, Indiana.

4. One or more field lessons each week in Lincoln Park.

Three phases of field-work will be considered:

I. The topographic forms of the regions visited, namely: The ravines, lake cliffs, beach, dunes, swamp, river bluffs, flood plain.

II. The vegetation of the areas. Characteristic flora of: prairie, upland forest, ravine, lake cliffs, beach, flood plain, swamps, dunes.

III. Animal life of the regions visited A study of the various animal forms found in swamp, forest, prairie, stream, beach, dunes, lake.

The main features of the work in the field will be: (1) Sketching with crayon and water-colors. (2) Taking photographs. (3) Collecting specimens. (4) Note-taking. (5) Imitation of bird notes. (6) Songs and games for the field. (See COURSE OF STUDY for July, 1900.)

Indoor work:

I. Construction of landscape backgrounds representing the regions visited. Blackboard sketches will be made by all of the children, and the one most representative of the region will be chosen by the class to be reproduced in color upon gray paper. In front of the background a model of the region will be made in sand. To these models the children will bring their collections of soils, stones, and plants.

(See geography outlines for July and October.) The landscapes, accompanied by written descriptions, are to be sent ultimately to a school in Kentucky, with which we are in correspondence, in order to let the children of that school see the kind of region which lies about Chicago.

II. Further investigation in laboratory and library of questions opened up by the field-trips. Questions asked by the different children while in the field will be recorded by the leader, and an opportunity will be afforded for such investigation as will help the children answer their own queries.

III. Planning of a morning exercise on the subject of birds, in which the children will imitate the bird notes heard in the field.

Art: Illustration of stories in crayon and water-color. Making of landscape backgrounds. Weekly painting of the June landscape in Lincoln Park. Sketching in the field. Painting of trees, flowers, birds, insects, and animals seen on field-trips.

History: I. Continuation of work on agricultural tools. (See history outline for April.)

II. Clothing. In the fall the subject of man's clothing was discussed by the children, and a study of wool was undertaken. The class invented ways to card and spin the wool, and prepared some thread to be used in their weaving. Later on in the year the children worked with cotton in a similar way.

During June, linen will be investigated, and also other fabrics made by people who live in countries where the climate all the year round is similar to our summer. If possible the children will weave some article from such coarse linen thread as they are able to prepare from the flax. A trip to Hull House to see flax spinning done by the Irish and Italian women will be taken at this time.

Literature: Longfellow, *The Story of Pearl Feather;* Cox, *Myths of the Aryan Nations, Myths of Persephone, Balder, Arachne;* Cooke's *Nature Myths, Indian Legend of the Robin.*

Industrial Art: Decoration of kites. Making of lunch-boxes for the field day planned by the children of the primary grades for the primary children of the Half Orphan Home. Weaving of baskets for use on field-trips.

Manual Training: I. Completion of the miniature homes begun by the First Grade in October.

II. The children have been allowed to choose the articles which they wish to make in the shop during June. The articles chosen were, doll-beds, doll-chairs, a sword and shield, book-shelves, picture-frames, boats.

Correlated Number: Weighing and measuring necessary in making experiments with the different kinds of stones, soil, water, etc., brought home from field-trips. Planning of field note-books, books to hold printed stories, and portfolios to hold the work of the year. Planning of article to be made in wood.

Since the work planned for June in nature study and geography is based upon field-work yet to be done, and the manual training is different for each individual, it is impossible to outline the number work in detail.

A sketch of the article to be constructed in the shop will be required of each child, and following the sketch, a working drawing will be made to be used as a guide in the shop. Whenever it is obvious that the children need more skill in combining numbers in order to carry out their plans economically, drill will be given.

Writing, Spelling, English: Field notes. Descriptions of regions visited. (See "Notes on a Trip to Highwood" in this issue of the COURSE OF STUDY.) Descrip-

tions of birds and flowers to be used as guessing games. Planning of the printed headings to be placed in field note-books, and placing of same in note-books. Placing of words in dictionaries. Written dramatization; subject to be chosen by the children from year's work.

Reading: Re-reading of the printed reading lessons of the year as the children bind them. Selections from the First and Second Readers bearing upon spring subjects. Lesson on "Highwood," and that on "Buds" in June COURSE OF STUDY. Texts of songs.

Music: (MISS PAYNE.) Songs: *The Violet*, Reinecke, Fifty Songs; *Dandelion Fashions, Clouds are Passing o'er the Sky, The Rain Coach*, all by Eleanor Smith, in Songs for Little Children, No. 2; *Oriole's Nest Song*, Modern Music Series, First Book.

Practice on the intervals of the fifth and third octave, and scale fragments, derived from the songs, as incidental drill.

Rhythm: The pulses found in the *Spinning Song* (Reinecke), illustrated by free arm movement as each child hears it; circling, one swing to each measure, and two swings to each measure; the same with the chalk on the blackboard.

After a visit to the blacksmith shop, the same idea will be carried out in the variation in swings of the hammer as the children play the game. The blacksmith's song of *The Forge* in the March COURSE OF STUDY, *The Blacksmith*, Mrs. Gaynor, and *The Blacksmith*, in Songs for Little Children, No. 1, will be played in the same way.

Speech, Oral Reading, and Dramatic Art: I. Hearing and reproducing bird notes on field-trips. Dramatization of one of the bird stories familiar to the children. Bird concert given by the children.

II. Poems to be studied: *The Great, Wide, Beautiful, Wonderful World*, Whittier's *Child Life*.

Physical Training: (CAROLINE CRAWFORD.) In June a festival of Greek games and sports will be given. For the first time the children will be allowed to compete in height, distance, etc.; but such competition will be in relation to standing height rather than absolute height or distance jumped. The field will be measured by them, and distances chosen by vote.

References: Chapman, *Bird Life, Bird Studies with a Camera, Handbook of Birds of Eastern North America;* Wright and Coues, *Citizen Bird;* Mabel Osgood Wright, *Birdcraft;* Coulter, *Plant Relations* and *Plant Structures;* Cowles, *Plant Societies of Chicago and Vicinity;* Salisbury and Alden, *Geography of Chicago and its Environs;* Comstock, *Insect Life;* Jordan and Kellogg, *Animal Life*.

Third and Fourth Grades

Gertrude Van Hoesen

Nature Study: The relation of water and light to plants, as planned in the May outline, will be continued. In addition, the following new points will be considered:

1. The relation of insects to plants: i. e., bees, butterflies, moths, flies, ants, earth-worms, slugs, cut-worms, etc.
2. Bird-life.

During a recent excursion the children saw thirteen different kinds of birds. By means of a visit to the Academy of Science, they were able to identify and become more familiar with these birds. During the remainder of May and June, they will look for and study the habits of these birds and others that nest in the park,

always using the Academy and the library to supplement their observations.

In connection with their geography, the Fourth Grade will make a study of the grains and other plants which are grown in the great areas throughout the Mississippi Basin. They will also make a study of the animals native to the different sections of the basin.

Geography: THIRD GRADE. Continuation of the study of illumination, and a general summing up of the requisites of a good city.

FOURTH GRADE. During the year the members of the Fourth Grade have been studying the city of Chicago from all the points of close contact. During the last month they have seen that it is a large commercial and railroad center by reason of its situation. In answering the question, "From where do all of these imports come?" it was thought best to consider the Mississippi Basin, which is one of the chief sources of supply.

By means of descriptions, stereopticon views, pictures, and reading, the children were taken over some of the principal railroads, in such a way as to include the features of the entire basin. For closer study the basin was divided into three parts—the eastern slope, as a whole, and the western slope north and south of the C. B. & Q. and the Union Pacific railroads.

The study of the basin was always from an industrial standpoint, the question always being, "What are the people doing?" The study of structure is necessary at *every* point to answer the question, "Why?"

The first trip was south on the Illinois Central to the Gulf of Mexico, back by the Mississippi River, then east over the Pennsylvania Railroad to Pittsburg, from there going south again along the crests of the Alleghanies following the water-parting to the Gulf.

By this time the children were able to see the great eastern slope as a series of pictures representing great industries, and divided it into regions occupied by grain, cotton, sugar, forests, etc.

The second trip will be along the Northern Pacific to the western water-parting, back to the Mississippi by way of the Missouri, beginning at Yellowstone Park, and again west to the mountains over the C. B. & Q. and the Union Pacific railroads. What are the great industries in that section of the country? Comparison with the eastern slope. What is the cause of the difference?

The third trip is again west over the Santa Fé Railroad to Denver, back to the Mississippi River by means of the Arkansas River, and possibly a short trip up the Red River.

In every case the structure of the country, the temperature, winds, and rainfall will be necessary to explain the industry. For instance: What is the reason for having the great irrigating ditches that we see in the West? This can be answered only by considering the cause of our great Western plains.

History: THIRD GRADE. (See work under manual training.)

FOURTH GRADE. The textile industries of Chicago.

Literature: All of the reading, both poems and prose, in connection with spring, birds, flowers, etc., that can be found in the library.

Manual Training (History): THIRD GRADE. (CORA CHAMPLIN.) The children will cast their spear-heads in bronze this month. It will be necessary for them to make models in wood first to be used in making the mold for the cast.

They have been studying Greek charts and books for both the general form and the decoration, which they must take almost literally since it is to be of Greek design.

They will draw them first on paper and afterward on ⅞-inch pine, which will be of sufficient thickness to model with carving chisels into the desired form.

Next, they will make the flask, which consists of two rectangular frames of the same size, made of ⅞-inch pine, and from two to three inches deep. Each frame should be hinged at one corner and hooked together at the corner diagonally opposite, so that it may be opened without disturbing the mold when the flask is to be removed. The frames should be large enough to allow at least three inches of space between the edge of the model and the frame. To insure the frames remaining in place during the process, a half-inch strip of hardwood, rounded so it will slip through an ordinary staple and the height of the two frames, may be nailed to either end of one, which is the "drag"; the staples being placed in corresponding positions in the ends of the other one, which is the "cope."

The cope is placed on a smooth board somewhat larger than the frame, and the model placed in the center. Lycopodium should be dusted over it sufficiently to keep the sand from adhering to the wood. Perhaps the most convenient way to handle it is to put it in a small cheesecloth bag so that it may be shaken on lightly.

Molding sand is used for the remainder of the mold. Ordinary sand will not answer because it will not pack, and if moistened, it will cool the metal so rapidly as to roughen the surface, and sufficient steam will be formed to burst the mold.

Sift in enough sand to cover the model to the depth of at least an inch, so that all that forms the surface and comes in contact with the model will be free from lumps; fill the remainder of the cope with the sand, and pound it gently down with a wooden mallet, having it so full that it may be leveled off with a straight edge to insure its being flush with the edge of the frame, so that it will not settle down when it is turned over onto another board. After turning it over, remove what was the base-board, and the model will be on top with one side visible. Dust this side with lycopodium, and over the entire surface sprinkle common white sand, which will act as "parting sand" to keep the two halves of the mold separate.

A round stick about an inch in diameter with a nail in one end makes a good "gate post" and should be stuck upright into the sand, the depth of the nail, about an inch and a half from the edge of the model. Place the drag on top, being sure the hooked corners are together and the pegs in the staples. Again sift in the sand and fill the frame level as before. After pounding it down, remove the gate post, being careful not to crack the sand in doing so, and press back the sand at the opening so as to leave a funnel-shaped mouth into which the metal is poured. Place a board on top and remove the top frame, without jarring it. The impression is now seen of the upper half of the model. The sand around the edge of the model, which is still in the first half, should be moistened so it may be pressed down more closely before the wood is removed. A sponge with a small camel's-hair brush inserted is the best thing to use, the water being supplied from the sponge as the brush follows the outline. The model should have two small holes drilled in at an angle on one side before it is put in, so that two long nails may be inserted by which to lift it out. The small hole made by the nail in the gate post will indicate where a narrow channel is to be cut leading into the impression as a path for the metal as it is poured in. Replace the top half, and it is ready for the metal.

For melting lead an iron pot may be used, and the lead melted in an ordinary

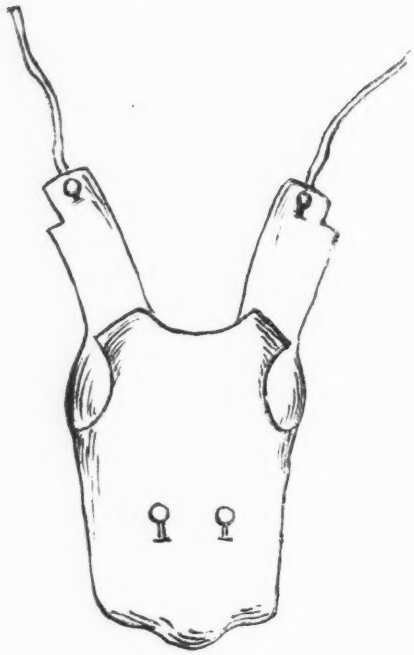


Fig. 1.

furnace, but for bronze a graphite crucible is necessary in which to melt it. For obtaining sufficient heat either a small blue-flame gas stove like that of a plumber, or a charcoal burner with bellows, may be used.

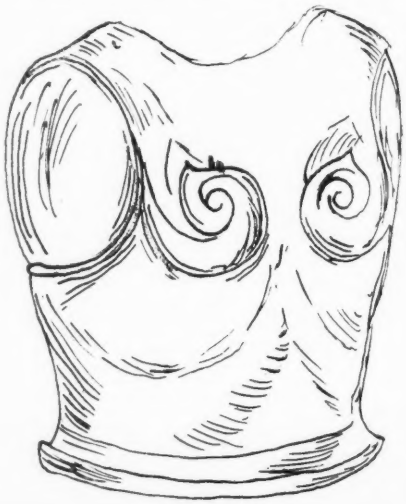
If the spears are finished in time, the children will make helmets and breastplates of cardboard.

To get the shape and size of the head for which the helmet is to be made, make a pattern first of paper by holding it against the side of the head and cutting it large enough to reach to the center, forming one half. By clipping the edges and lapping them, or cutting them out, it can be made to curve into shape. Cut the two sides from the cardboard, and either sew or glue them together down the center, afterward covering it with whatever color is desired for the metal to be represented.

The breastplate is perhaps best made by taking a large sheet of cardboard and gluing it together in a cylindrical shape, or rather that of a truncated cone, large enough to slip over the child's shoulders. Cut the body of it from the lower end so as to leave the larger end for the shoulders. There will be enough left in length to cut the shoulder strips continuous with the back of the armor, as in Fig. 1.

One method of fastening it is to cut a slit in the cardboard wide enough to admit a loop of tape with a ring on it, and glue the ends on the inside to the cardboard. A long piece of tape may be attached to tie them down to the rings fastened lower on the body. The plate may be covered with silver paper, or tin foil, or any colored paper which will represent the metal, as with the helmets. This is merely a suggestion of design, and any other form may be used in a similar way.

THIRD AND FOURTH GRADES. In both manual training and textiles an exhibit of work of all kinds is being made for a school in the mountains of Kentucky. The children are planning and making



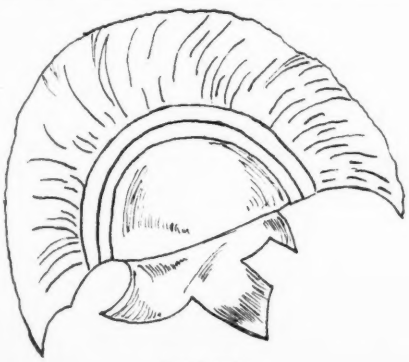
BREASTPLATE

HELMET

things for that purpose, in wood, embroidery, basketry, and other forms of hand-work.

Art: Illustrations of nature — birds, flowers, etc., in our environment. Illustrations of stories and of the scenes on the journeys taken in the geography class. One of the special interests just now is the painting of all of our wild flowers to bind together for this exhibit.

Music: (Miss Payne.) Songs that express the moods and phases of nature in early summer will be used. The *Song of the Forge* will be used in relation to their work upon Greek games and weapons, also the *Sword Song*, Von Weber, in Songs of Life and Nature. *Dark Brown is the River*, by Edward Smith, in Song Pictures, and *The Canadian Boat Song* will be sung as having general interest. The easy rounds which the children began in May will be continued in June. They will write them, taking them from the heard melody. They will find the agreeable chords made when sung, and then the same chords in the accompaniments of their old songs.



HELMET

French: (Mlle. Ashléman). A little visitor told the children of the Third and Fourth grades the story of *La Belle aux Cheveux d'Or*. In June this story will be used for reading lessons.

Enigme

Solution de l'énigme de mois de mai—"la bergère."

La Belle aux Cheveux d'Or

Il y avait une fois un roi qui était très riche et très bon. Il avait une fille qui était très belle. Elle avait de longs cheveux plus fins que de l'or. Elle portait toujours une couronne de fleurs sur la tête, et tout le monde l'aimait parcequ'elle était si bonne et si belle.

Son voisin était un jeune Roi. Il apprit que la Belle aux Cheveux d'or était très bonne: et, pensez donc, il se mit à l'aimer. Bientôt il aima tant la princesse qu'il n'avait plus soif et qu'il ne voulait plus manger.

Il choisit un ambassadeur et l'envoya chez la princesse. Il lui dit d'être sûr de lui amener la Belle aux Cheveux d'or. L'ambassadeur est allé chez la princesse. Il lui fit son petit message. Mais la princesse répondit, "Non, monsieur l'ambassadeur, je vous remercie, mais je ne veux pas me marier."

L'ambassadeur bien triste de ne pas avoir réussi, retourna chez son roi. Il rap-

porta tous les présents qu'il avait portés à la princesse. Vous voyez, cette petite princesse était très sage, elle ne voulait pas accepter les diamants de son voisin.

Quand le Roi apprit que l'ambassadeur n'amenait pas la Belle aux Cheveux d'or, il se mit à pleurer comme un enfant.

Il y avait à la cour un jeune garçon, beau comme le soleil. Parcequ'il avait beaucoup d'esprit on l'appelait Avenant. Tout le monde l'aimait à l'exception des envieux.

Avenant lorsqu'il apprit que le Roi pleurait, dit, sans y prendre garde: "Si le Roi m'avait envoyé vers la Belle aux Cheveux d'or, je suis certain qu'elle serait venue avec moi."

Alors les envieux sont allés au Roi, et ils ont dit. "Sire, Avenant dit que si vous l'auriez envoyé chez la Belle aux Cheveux d'or, il l'aurait amenée. Il prétend être plus beau que vous."

Le Roi se mit en colère et il s'écria, "Ce garçon se moque de moi; qu'on le mette en prison et qu'il y meure de faim!"

Un jour le pauvre Avenant, presque mort dans sa prison, couché sur de la paille dit en soupirant: "De quoi se plaint le Roi? Je ne l'ai jamais offensé et je l'aime encore de tout mon cœur." A ce moment là le Roi passait par hasard; il s'arrêta et il écouta. Les larmes lui vinrent aux yeux, il ouvrit la porte, et il appela Avenant. "Que vous ai-je fait, sire?" dit Avenant aux Roi, se mettant à genoux devant lui.

"Tu t'es moqué de moi et de mon ambassadeur."

"Sire," répondit Avenant, "ce n'est pas vrai, mais je suis persuadé que j'aurais si bien fait connaître vos grandes qualités à la Belle aux Cheveux d'or qu'elle serait venue avec moi."

Le Roi se répentit de la peine qu'il avait fait à Avenant, et il l'invita à souper avec lui. Au dessert le Roi dit à Avenant, "Mon ami, j'aime toujours la Belle aux Cheveux d'or; va voir si tu peux l'amener à mon palais."

"Soit," dit Avenant, "je veux vous obéir en toutes choses. Je partirai après demain."

"Oh!" dit le Roi, "je vous donnerai un grand équipage."

"Ce n'est pas nécessaire," répondit Avenant; "donnez moi seulement un bon cheval et des lettres de votre part."

Le Roi était charmé et il embrassa le jeune homme.

Avenant partit à la pointe du jour. Il passa à travers un grand bois. Dans ce bois il vit une pauvre femme. Elle était assise sur l'herbe et elle pleurait. Avenant en eut pitié et il lui dit, "Qu'avez-vous donc, ma bonne femme?"

"Ma petite fille est très malade, elle va mourir parceque je suis si faible, que je ne puis aller au village lui chercher de la médecine. Voilà huit jours que je n'ai fermé l'œil, et je n'en peux plus."

"Ma pauvre femme, j'ai pitié de vous. Le Roi m'a envoyé chez la Belle aux Cheveux d'or. Le Roi aime cette princesse de tout son cœur. Mais le Roi se porte bien, la princesse aussi; votre petite fille est malade, elle a besoin de secours. Eh bien, j'irai soigner votre petite fille. Quand elle sera bien portante, je continuerai mon voyage."

"Ah, monsieur, que vous êtes bon, que Dieu vous bénisse!"

"Restez-ici, ma bonne femme, j'irai vite chercher la médecine. En revenant je passerai par ici et je vous aiderai à marcher chez vous. Quelle est la médecine vous voulez?"

La vieille femme lui donna un petit morceau de papier. "Le nom est écrit ici."

Avenant prit le papier et s'en alla vite au village. Arrivé au village il entra dans une petite boutique où il acheta la méde-

cine sans aucune difficulté. Le marchand lui donna la médecine dans une drôle de fiole. Alors il alla vite retrouver la pauvre femme.

Quel fut son étonnement, elle n'y était plus!

"Elle a eu peur de laisser sa petite fille seule. J'essayerai de trouver la maison moi-même."

Avenant marcha longtemps. La nuit tombait, les êtoiles se montraient. Avenant se mit à appeler.

"Mais où êtes vous donc, il y a longtemps que je vous cherche?"

Une voix lui répondit: "Ici, venez ici, vous avez bien fait de nous chercher."

Tout à coup un magnifique palais se dressa devant lui. Il entendit de la belle musique, mais la musique était si triste qu'Avenant se mit à pleurer.

"Pourquoi votre musique est-elle si triste?" demanda Avenant à un soldat qui marchait devant le palais. "Parceque la princesse meurt et elle a commandé cette musique. Une méchante fée a dit, qu' à l'âge de dix-huit ans la princesse mourrait, à moins qu'un jeune homme n'eût pitié d'elle pensant qu'elle n'était qu'une pauvre petite fille il devait aller lui chercher de la médecine dans un petit village appelé le village des fées. C'est la marraine de la princesse, une bonne fée qui a fait cette condition lorsque la méchante fée a dit qu'elle devait mourir.

"Mais le jeune homme n'arrive pas, et elle va mourir! Notre belle, belle princesse!"

"Oh!" s'écria Avenant, "j'ai la médecine, j'ai la fiole; tenez, prenez la, apportez cette fiole chez le Rôi afin que la princesse la prenne tout de suite."

* * * *

Bien vite le ton de la musique changea; elle devint gai. De brillantes lumières parurent à chaque fenêtre du palais. Avenant se crut au paradis lorsque la belle princesse elle-même vint s'agenouiller devant lui afin de le remercier.

"Vous pouvez m'amener où vous voulez; je vous suivrai au bout du monde!"

Quelques jours après, lorsque la princesse et Avenant voyageaient vers le Roi, un courrier les arrêta, s'agenouilla devant Avenant et lui donna une lettre.

Que pensez-vous qu'il y avait dans cette lettre?

Le Roi était mort. Avant de mourir il avait choisi Avenant pour son successeur, et il le priait aussi d'épouser la Belle au Cheveux d'or.

Fifth Grade

Willard Streeter Bass

History: The central point of the year's work in history thus far has been the industrial and social life of the early colonists in America, and the study has been based upon the manner in which the various settlers sought to satisfy the immediate need for food, shelter, and clothing, to acquire wealth by trade, and to reduce the wilderness into peaceful and populous colonies. Incidentally the pupils have obtained an idea of the love for religious and political freedom which induced many of the colonists to leave comfortable homes for the hardships of frontier life. They have also seen the vigorous pioneer life of the colonists develop the love of freedom even in those of their number in whom it was not at first strong. The work of this month will be to show how this love of freedom and fear of even the shadow of tyranny led to the complete independence of the Colonies.

The starting-point for the work on the Revolutionary War will be the story of the battles of Lexington and Concord, as the class was much interested in these events when their anniversary was celebrated by the school. The story will be retold to the class, illustrated with stereopticon pictures, and made in every way as vivid as possible. The children will reproduce in chalk drawings the points which have most appealed to them, and will write the story of the day.

The class will then follow the rapid gathering of the militia around Boston, their efforts to keep the British in that city, and to cut off their supplies from the country, and finally the attempt of the Americans to dislodge the British from the city by occupying the heights at Charlestown. The story of the battle of Bunker Hill will be told, and a sand-modeled map of Charlestown will be constructed, the position of the Americans and British located, and their movements during the day followed. Stereopticon pictures will be shown and the dramatic interest of the occasion will be used as effectively as possible.

The men behind the redoubt will be contrasted with those in front of it. The latter, uniformed, well-drilled, unthinking servants of the royal will, were very unlike the brave, undisciplined fighters in homespun at the top of the hill. The class will find out what kind of homes the latter came from; why they wore homespun; what they had to eat in their homes; why they had no tea; what they used in place of it; what their occupations were; and why they had resisted the march of the British at Concord, and had taken the aggressive at Bunker Hill.

The answer to the last question will show some of the annoyances placed in the way of American trade and manufacture; how the Colonies could trade only with England; how many things, such as iron products, could not be manufactured in the Colonies; and finally the exasperating tax on tea and the story of the Boston tea party.

Drawing: An illustration of the battle of Lexington and Concord; an illustration of the battle of Bunker Hill.

Writing: The stories of Lexington and Concord and of Bunker Hill will be written out by the class.

References: Lodge, *The Story of the Revolution*, Ch. I–III; Winsor, *Narrative and Critical History of America*, Vol. VI, Ch. I–II; Morris, *History of United States*, pp. 172–200; Eggleston, *History of the United States and its People*, pp. 161–167; Frothingham, *Siege of Boston*.

Geography: The work for the month will be the study of the Western Highland of North America, a review of the parts of the continent previously studied, and a study of the relation of the various sections to each other and to the whole continent.

Topographically the Western Highland may be divided into three sections—that north of Puget Sound, that between Puget Sound and the Isthmus of Tehuantepec, and that south of the Isthmus of Tehuantepec.

The region north of Puget Sound will first be studied. After the class has obtained an idea of the topography of the region as a whole, it will seek a more detailed knowledge of the scenery and vegetable and animal life of the region by following an ideal summer excursion, via the Mackenzie River to the Arctic Ocean, and another via Skagway and the White Pass to Dawson City.

The region between Puget Sound and the Isthmus of Tehuantepec will be studied as a great basin whose walls are broken for the exit of the Columbia and Colorado rivers. The wonderful scenery in this region will be studied from pictures, and the class will use the simple principles of the action of weathering and erosion to determine how some of it was formed. The scarcity of rainfall in this region will also be noticed, a reason for it found, and the resulting vegetation described. The climate and vegetation of California will be compared with that of the Great Basin, and the influence of the Sierra Nevada mountains upon climate made plain.

The region south of the Isthmus of Tehuantepec has now a special interest on account of the proposed Nicaragua and Panama canals. The class will examine the topography of the region carefully enough to see some of the advantages of each route, and will study climate and people in order to perceive some of the difficulties in the way of constructing these canals.

The final work of the class will be the making of a map of North America, showing the relief in black and white and the character of the vegetation in color.

Sand Modeling: Maps of the three sections of Western Highland. Map of North America.

References: Carpenter's Geographical Readers, *North America*, pp. 235–316, 327–352; Tarr and McMurray, *Home Geography*, pp. 176–189; *North America*, pp. 281–330, 378–393.

Nature Study: METEOROLOGY. The weather records will be continued in the same manner as in previous months. The observations with the skiameter will also be continued. At the close of the month the class will have a record of the sun's slant from the winter to the summer solstice. It will also have a record of the average temperature for each month, and will be able to form an estimate of the effect which the slant of the sun's rays has upon temperature. An immediate application of this knowledge will be made in showing the influence of latitude upon climate. The continent of North America is the subject of the month's work in geography. The class will determine the location of various parts of the continent upon the globe, and will find the slant of the sun's rays for several sections—such as Alaska, the northern boundary of the United States, and Mexico—at the equinoxes, the summer and the winter solstices.

BOTANY. During the past month the class has found that water is a necessity

for plant life, and has formed some idea of the quantity of water which is supplied to plants in the form of rain. In this month a study will be made of the means by which the plant secures and loses moisture.

The class will obtain plants from places in which the moisture is present in the soil in widely varying amounts, such as swamps, prairie, and sand ridge, and will examine their roots to see if there be any characteristic peculiar to the plants growing in dry and in wet places. Similar observations will be made upon the leaves.

To show what becomes of at least part of the water which a plant takes in, the experiments under transpiration, described in the May COURSE OF STUDY,* will be performed by the class.

Painting: The frequent painting of the landscape will be continued through this month. The observations upon the structure of the plants of various areas will all be recorded in color.

References: Jackman, *Nature Study in the Grammar Grades*, pp. 133–135, 380–391; *Nature Study and Related Subjects*, pp. 133–137, 159–163.

Number: To completely understand the effect of the slant of the sun's rays upon climate, it is necessary to know the exact area covered by a beam of constant cross-section at different latitudes. For this purpose the class will find the noon elevation of the sun at a given place, in degrees, by adding to or subtracting from the latitude of the place the number of degrees which the sun is north or south of the equator. Then it will represent a beam of sunshine two inches square by two parallel lines two inches apart, and with the aid of a protractor will draw a horizontal line, making the required angle with the beam of sunshine. Upon the part of the horizontal line intercepted by the parallel lines the class will construct a rectangle with an altitude of two inches. This rectangle will evidently represent the area covered by a beam of sunshine two inches square under the required conditions. Such rectangles will be constructed for the latitude of Dawson City, Quebec, Chicago, New Orleans, and Mexico, and at the times of the winter solstice, the vernal equinox, and the summer solstice.

A consistent attempt has been made during the year to have the number work so correlated with the geography and science that the pupils should feel the necessity for a process before they were required to learn it. Facility in the arithmetical operations can come only through constant repetition, and for the sake of gaining this, a certain number of drill problems in common and decimal fractions will be given during this month.

Manual Training: (MR. CARLEY.) For the last month of the year the children will be allowed to follow their own ideas, as far as possible, as to what they shall make in wood-work. Each child will be asked to bring a sketch of what he would like to make—and from this, modified to suit his ability, and corrected as to construction and design, a working plan will be made, to be followed in the manual training shop.

Music: (MISS PAYNE.) The children in this grade are at the age when the dramatic in songs appeals to them very strongly. The songs of nature and home will give way somewhat to the historic songs. The history of Canada taken in May gives interest to some of the characteristic Canadian French songs. *The Canadian Boat Song* will be sung.

Songs: *The Sword Song*, Von Weber, and *The Harp that once in Tara's Halls*,

*Page 836, "Directions for Pupils in the Grammar Grade," I, 4. Experiments 1-3.

from Songs of Life and Nature: *The Forge* (see March COURSE OF STUDY); *Oriole's Nest Song*, First Book Modern Music Series; *Dark Brown is the River* (see "Music" under First Grade outline for this month).

Sixth Grade

Edith Foster Flint

History and Literature: Though the children have been devoting considerable time to the story which they are writing in connection with their study of the Crusades, work on it has necessarily been slow. This is true because of their lack of practice in writing and their inadequate knowledge of the time—the one deficiency necessitating much revision, the other considerable looking up of topics such as dress, customs, home-life, education, and so forth. There has been, of course, a wide difference in the ways in which the children have handled the story, some showing a good deal of individuality and others following very closely models such as *Ivanhoe*.

During this month the work in binding, illuminating the title-page, and painting the frontispiece will continue, the teacher employing part of the time while the children are thus engaged with hand-work in reading aloud from *The Boys' King Arthur*. The children have received suggestions for their hand-work from visits to the manuscript collections in the Newberry Library and the Art Institute. For alphabets they have had reference to E. F. Strange, *Alphabets;* L. F. Day, *Alphabets, Old and New;* F. S. Mayer, *Hand-book of Ornament*.

Some of the children have chosen to make, in imitation of the publishers, bookplates for themselves, and others have made for the title-page a small design in black and white, suggestive of the story to follow. A good deal of ingenuity and taste has been shown in the making of these designs.

At the close of this month, which is also the close of the school year, a short time will be devoted to summarizing the results of the Crusades, with particular reference to the impulse afforded by the importation into Europe of the mariners' compass and the broadening of men's minds by travel. This will lead to the consideration of the Portuguese voyages and the discovery of America. The aim will be to show that European history and American history are not separate things, but that the discovery of America was the natural outgrowth of movements affecting European thought.

Geography: The geography subject this year has been *Eurasia*. The aims sought to be accomplished through the study have been several. The customs, manners, dress, institutions, and beliefs of certain peoples—expressions of their ways of thinking,—moving against the background of their natural environment—the clear imaging of these has been one aim. To understand the peoples without the environment would be impossible; to study the environment without the peoples would be to lose meaning. This study of present environment, or climate and landscape, has necessarily led to that of landscape-making, or physiography. A clear idea of the forces at work on the earth's surface, their methods of operation, and their importance has been a second aim. In considering the peoples of vari

ous countries, particularly those of China and India, whose modes of thought are so different from our own, pains have been taken to present them dispassionately, so that the pupils might feel, not critical and antagonistic, but sympathetic. Open-mindedness, then, has been a third aim—open-mindedness and a sense of the brotherhood of man.

The methods and materials used have been much chalk-modeling, both of maps and of typical landscapes; landscape work on paper, both in paints and colored chalk, the latter pictures being of large size; sand-modelings; stereopticon views and pictures from the library; verbal descriptions given by teachers and by pupils who have traveled, and taken from literature; dramatic representations; and field-trips.

Number: Much of the number work of the year has been done in connection with the science and geography. It has been found, however, that the pupils have been hindered from using number as an aid to understanding other subjects by their lack of technical proficiency. Consequently the last month will be devoted to drill work, particularly in fractions and percentage.

Music: (Miss Payne.) Most of the songs will be the same as those used in the Seventh and Eighth grades this month. Simple rounds will be sung and read from the staff, in several keys, and transcribed from ear.

Songs: *Old King Barbarossa*, *Oriole's Nest Song*, First Book, Modern Music Series.

French: (Mlle. Ashléman.) The study of the subject of chivalry will be continued, and the work for the month will be based upon the accompanying dramatization:

Un Pique-Nique à Versailles

Fadette (*gaiement*). Qu'il fait beau aujourd'hui. Vraiment les tartines ont meilleur goût quand on les mange en plein air. Quelle bonne idée tu as eue, maman, d'arranger ce pique-nique au parc au-lieu de nous faire passer l'après-midi dans notre chambre à étudier.

Henri (*allant à sa mère avec enthousiasme*). Nous y retournerons bien souvent cet été n'est-ce pas, petite mère?

Marie. Regarde, Guillaume. Tu sais, je déteste les croûte, eh bien! je n'en ai même plus le plus petit morceau.

Mme. Lemaitre (*lui donnant une petite tape sur la joue*). Voilà ce que c'est que d'avoir faim. La faim donne du goût à tout.

(On entend une musique militaire, "La Marseillaise.")

Mme. Lemaitre et les enfants (*se mettent à chanter*).

"Amour sacré de la Patrie,
Conduis, soutiens nos bras vengeurs!
Liberté, liberté chérie,
Combats avec tes défenseurs!
Combats avec tes défenseurs!
Sous nos drapeaux, que la victoire
Accoure à tes mâles accents;
Que tes ennemis expirants
Voient ton triomphe et notre gloire!
Aux armes, ci-toyens!
Formez vos bataillons!
Marchons! Marchons!
Qu'un sang impur abreuve nos sillons!

Guillaume (*aperçoit Mlle. Convert, la gouvernante, à travers les arbres*). Voilà, Mlle. Convert qui vient nous faire notre cours d'histoire. (Toute la petite bande se précipite vers Mlle. Convert.)

Joseph (*galamment*). Mademoiselle, il nous reste encore une sardine, deux olives, et un biscuit (*il court vers le couvert met la sardine, les olives et le biscuit sur une assiette. Avec un petit salut*). Permettez, mademoiselle, que je vous les offre.

Mlle. Convert (*le regardant avec un sourire*). Merci, Joseph. Je viens de dé-

jeûner. (*Se rapprochant du couvert.*) Mettons tout ceci dans les panirs, plions la nappe, asseyons nous sur l'herbe et commencons nos petites anecdotes au sujet du bon roi Saint Louis.

(*Mme. Lemaître et les enfants font cercle autour de la gouvernante, Mlle. Convert regardant Mme. Lemaître.*)

Mlle. Convert. Le mercredi, nous racontons toujours des anecdotes relatives aux personnages que nous venons d'étudier. Voulez-vous commencer, Mme. Lemaître?

Mme. Lemaître. Mais, oui, mademoiselle! Vous voulez quelquechose à propos du roi Saint Louis. Voyons! Chez Saint Louis, la bonté envers ses serviteurs était si grande qu'elle ressemblait à l'affection. En même temps qu'il exigeait de ses serviteurs une moralité presque sévère. Il passait volontiers sous silence leurs petites fautes, les traitait avec douceur, avec égards, satisfaisant l'amour propre des hommes, les relevant à leurs propres yeux. Louis visitait ses domestiques quand ils étaient malades, quand ils étaient morts, il faisait chanter pour eux la messe des morts.

Son grand-père, Philippe Auguste, avait renvoyé un vieux serviteur parceque son feu pétillait et que Jean chargé de l'entretenir, n'avait pas su empêcher ce petit bruit.

Saint Louis avait repris le domestique. Le roi était de temps en temps atteint d'une maladie dans laquelle sa jambe droite entre le mollet et la cheville devenait enflée, rouge comme du sang. Un jour, le roi, en se couchant, voulut voir de près la rougeur de sa cheville. Jean, qui tenait maladroitement une chandelle allumée auprès du roi, laissa tomber une goutte brûlante sur la jambe malade, et le roi, qui était assis sur son lit, se rejeta en arrière en s'écriant, "Ah! Jean, Jean, mon grand-père vous donna pour moindre chose congé de son hôtel!"

Fadette. Le pauvre roi; quelle honte! Moi, à sa place, je me serais fâchée.

Louis. Je crois bien!

Mlle. Convert. Un maître doit être charitable et Saint Louis avait la grandeur d'âme royale. Louis, qu'avez-vous à nous dire?

Louis. Un jour, Saint Louis taillait le pain des pauvres et leur donnait à boire. Il demande à Joinville qui le regardait faire s'il lavait les pieds aux pauvres le jour du jeudi saint.

"Sire," répondit Joinville, "quel malheur! Les pieds de ce vilains. Je ne les laverai pas—"

"Vraiment," dit le roi, "c'est mal dit, car vous ne devez pas avoir en dédain ce que Dieu fit pour notre enseignement Je vous prie donc pour l'amour de moi que vous vous accoutumiez à les laver."

Fadette. Mon anecdote est aussi à propos des pauvres, Louis.

Louis. Vraiment, veux-tu nous la raconter?

Fadette. Un jour que Saint Louis avait du loisir il dit au Sire de Joinville, "Allons visiter les pauvres."

Quand le roi et Joinville arrivèrent à Château-neuf-sur-Loire, une pauvre vieille femme qui était devant la porte de sa maison et qui tenait un pain à la main, lui dit. "Bon roi, c'est de ce pain venu de ton aumône qu'est soutenu mon mari qui est là dedans malade."

Le roi prit le pain disant, "C'est assez dur pain," et il entra dans la maison pour voir lui-même le malade!

Henri. Toutes nos anecdotes se ressemblent, voici la mienne:

Un vendredi saint, à Compiégne, Saint Louis visitait les églises: ce jour-là selon sa coutume il allait pieds nus et distribuait des secours aux pauvres qu'il rencontrait. Il aperçut, de l'autre côté d'une mare bourbeuse, qui occupait une partie de la rue, un lépreux qui n'osant s'ap-

procher, essayait d'attirer l'attention du roi. Louis traversa la mare, alla au lépreux, lui donna de l'argent, lui prit la main et la lui baisa. Joinville se signa d'admiration en voyant cette témérité du roi, qui n'avait pas craint d'appliquer ses lèvres sur une main que personne n'aurait osé toucher.

Louis. Moi, je vais vous dire quelque-chose de plus gai.

Joinville raconte que Saint Louis était aussi très gai.

Joinville était assis au pied du lit de Saint Louis. Les prêcheurs et les cordeliers qui étaient là lui parlaient d'un livre. "Vous l'entendriez volontiers, Sire," disait un des prêcheurs.

"Non, vous ne me lirez pas, car il n'est ni bon livre après manger, que propos ad libitum, c'est à dire que chacun dise ce qu'il veut." Pourtant Saint Louis aimait beaucoup les livres. Il lisait quant il avait quelque loisir. Quelque fois après diner il appelait le savant, Robert de Sorbon, le fondateur de la Sorbonne, ainsi que Joinville pour jouir de leur conversation. Un jour Joinville et Robert de Sorbon mangeait à côté du roi et ils causaient bas, l'un avec l'autre. Le roi leur dit, "Si vous parlez en mangeant de choses qui doivent nous plaire, parlez haut, sinon taisez-vous."

M. Lemaitre (qui s'est approché du groupe sans être aperçu, gaiement). Dorénavant je veux être des vôtres les jours d'anecdotes historiques. Il se fait tard. La voiture vous attend dans l'allée.

Seventh and Eighth Grades

Nott William Flint

History: For June the class will continue the history of England from the Norman Conquest. So far as possible the historical events will be given to the class through literary presentations. In the case of Richard I., for instance, the character of the man as it is shown in Scott's *Talisman* and *Ivanhoe* will be contrasted with his character as shown in history. The subject will be introduced by the stories of the Angevin kings brought in by different class members. The emphasis, however, will be put, not upon political events or kingly successions, but upon the events which made for the advancement of the whole people's interests.

(A.) Henry II. Queries in connection with the story of Henry: (1) What was the effect of Henry's destroying the illegal castles in England? (2) What was scutage, and how did it effect feudalism? (3) Advantages and disadvantages of the employment of mercenary soldiers? (4) What nations at the present day compel their young men to military service?

I. The story of Thomas à Becket: (Each member of the class will be asked to bring in the best account he can find of this story.) From the many questions which rise from this story, the teacher must choose those he thinks best for class discussion, and for research.

II. Beginning of English conquest of Ireland.

1. Condition of Ireland after the Danish invasions.

2. The four Irish kingdoms.

3. Reasons for Henry's conquest in Ireland. (In this connection the geography of Ireland and perhaps some discussion of its more modern history may be taken up.)

III. Henry's legal reforms.

1. Administration of justice before Henry's time: "Compurgators"; the English trial by ordeal; the Norman trial by combat.

2. Trial by jury: origin of and first important use in England. (Gardener's *History of*

England.) Queries: What is present meaning of "inquest"? How is grand jury chosen and made up, and what are its functions?

(B.) Richard Cœur de Lion and the Crusades. Selections from the *Talisman* and from *Ivanhoe*. Richard's character in history and in the novels. And in connection with Richard the class will, so far as possible, take up the study of the Crusades.

1. Crusades: What they were.

A great movement affecting the whole of Europe—armed pilgrimages.

1. Causes of Crusades: (a) Persecution of pilgrim traders and travelers to the East by the Seljukian Turks. (b) Desire of European princelings to win independent kingdoms for themselves. (c) Immunities granted by Popes to Crusaders. (d) Love of adventure.

2. Changes through which Palestine had passed: Jews, Romans, Christian Romans, Arabian Caliphs—Haroun al Raschid—Seljukian Turks.

3. Routes of Crusaders: (a) Via Italian ports. (b) Via river valleys. (Trace out route of first Crusade—from north central parts of France up the Rhine valley to Neckar; up the Neckar to Ulm; thence down the Danube through Bulgaria to Constantinople, across the Bosphorus, and through Asia Minor to Jerusalem.)

4. Results of Crusades: (a) Broadening of men's minds. (b) Bringing back of marine compass. (c) Rise of Italian cities and of trade generally.

II. Rise of English towns:

1. The big towns of the time—where were they built and why? (See map of the Angevin Empire.)

2. Their charters, industries, and trades.

3. Freedom from rights of lordship.

4. Trade guilds (compare with the modern trade union).

5. Local trade of towns.

6. Effect of foreign immigration.

7. Effect of Norman Conquest on towns.

8. Roads, markets, and market days.

9. What were the exports of England at that time?

10. To whom do the British owe their first knowledge of woolen manufactures?

11. Name some cities in the British Isles famous for woolen manufactures?

12. What did William the Conqueror do to help bring about sheep-raising in England?

(C.) King John. (1) Reasons for the election of John. (2) Death of Arthur and dissolution of the Angevin kingdom. (The class will read here the fourth act of Shakespeare's *King John.*) (3) John's quarrel with the Pope. (Query: Why did the Pope punish the people with an interdict, instead of John?)

I. Magna Charta:

1. What is Magna Charta?

2. What gave rise to it? (Query: How did the new combination of people and barons against the king come to be?)

3. Was England the only country to have a charter? (Query: What was the difference between England's charter and other countries' charters? See Gneist's *History of the English Constitution.*)

4. Why were provisions for the execution of its promises put into the charter?

5. Comparison of British with American constitution.

6. How can changes be made in each? Which is the more flexible?

II. Results of charter:

1. Simon de Montfort, the new leader of the people.

2. The barons' war.

3. Birth of representative parliament.

4. English houses of Commons and of Lords.

5. Comparison of English Parliament with continental and with American ones.

III. Subjugation of Wales: "Prince of Wales."

1. Scottish war of independence. William Wallace and Robert Bruce.

References: Green, *History of the English People;* Stubbs, *English People;* Traill, *Social England;* Mills, *The Crusades*, and *Chivalry;* Thatcher and Schwill, *Middle Ages;* Michaud, *The Crusades*, illustrated by Doré.

Oral Reading: Mrs. Heman's poem on the death of Henry the First's son; Shakespeare's *King John;* Act IV, and selected parts; Scott's *Talisman* and *Ivanhoe*.

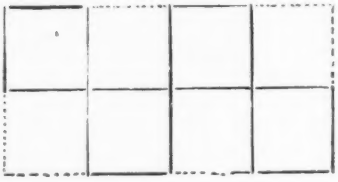
Hand-work: Illustrative scenes on crayon paper, on the blackboard, and on drawing paper. Drawings of castles—plan of a castle.

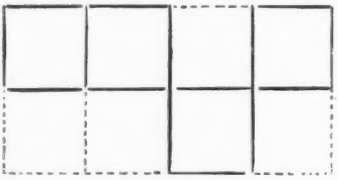
Nature Study: The outline published in May was for June also.

Latin: See High School outline.

French: (Mlle. Ashléman.) In June the class will take up parts of Molière's lighter comedies.

Petits Jeux





Solution du mois de mai.

Farce du Médecin Malgré Lui

[Sganarelle est un excellent fagotier qui a le tort de battre sa femme. Celle-ci jure de se venger. En ce moment, arrivent deux étrangers qui sont à la recherche d'un médicin assez habile pour guérir la fille de leur maître. La femme de Sganarelle profite de l'occasion et leur désigne son mari comme un grand docteur qui cache sa science et qu'il faut battre pour qu'il en convienne. Qu'à cela ne tienne, il sera battu. En effet, plutôt que de mourir sous les coups de bâton, Sganarelle convient de sa science et on le conduit auprès de la jeune fille.—Bonnefon.]

Sganarelle. Est-ce là la malade?

Géronte. Oui, je n'ai qu'elle de fille; et j'aurais tous les regrets du monde si elle venait à mourir.

Sganarelle. Qu'elle s'en garde bien! Il ne faut pas qu'elle meure sans l'ordonnance du médecin. (*A Lucinde.*) Hé bien! de quoi est-il question? Qu'avez-vous? Quel est le mal que vous sentez?

Lucinde (*répond par signes en portant la main à sa bouche, à sa tête et sous son menton*). Han, hi, hon, han.

Sganarelle. Hé! que dites-vous?

Lucinde (*continue les mêmes gestes*). Han, hi, hon, han, han, hi, hon.

Sganarelle. Quoi?

Lucinde. Han, hi, hon.

Sganarelle (*la contrefaisant*). Han, hi, hon, han, ha. Je ne vous entends point. Quel diable de langage est-ce là?

Géronte. Monsieur, c'est là sa maladie. Elle est devenue muette, sans que jusques ici on en ait pu savoir la cause; et c'est un accident qui a fait reculer son mariage.

Sganarelle. Et pourquoi?

Géronte. Celui qu'elle doit épouser veut attendre sa guérison pour conclure les choses.

Sganarelle. Et qui est ce sot-là, qui ne veut pas que sa femme soit muette? Plût à Dieu que la mienne eût cette maladie! je me garderais bien de la vouloir guérir. (*Se tournant vers la malade*). Donnez-moi votre bras. (*A Géronte.*) Voilà un pouls qui marque que votre fille est muette.

Géronte. Hé oui, monsieur, c'est là son mal; vous l'avez trouvé tout du premier coup.

Sganarelle. Ha! ha!

Jaqueline. Voyez comme il a deviné sa maladie!

Sganarelle. Nous autres grands médecins, nous connaissons d'abord les choses. Un ignorant aurait été embarrassé, et vous eût été dire: c'est ceci, c'est cela; mais moi, je touche au but du premier coup, et je vous apprends que votre fille est muette.

Géronte. Oui: mais je voudrais bien que vous pussiez dire d'où cela vient.

Sganarelle. Il n'y a rien de plus aisé; cela vient de ce qu'elle a perdu la parole.

Géronte. Fort bien. Mais la cause, s'il vous plaît, qui fait qu'elle a perdu la parole.

Sganarelle. Tous nos meilleurs auteurs vous diront que c'est l'empêchement de l'action de sa langue.

Géronte. Mais, encore, vos sentiments sur cet empêchement de l'action de sa langue?

Sganarelle. Aristote, là-dessus, dit—de fort belles choses.

Géronte. Je le crois.

Sganarelle. Ah! c'était un grand homme!

Géronte. Sans doute.

Sganarelle. Grand homme tout à fait (*levant le bras depuis le coude*); un homme qui était plus grand que moi du tout cela. Pour revenir donc a notre raisonnement, je tiens que cet empêchement de l'action de sa langue est causé par de certaines humeurs, qu'entre nous autres savants nous appelons humeurs peccantes; peccantes, c'est-à-dire—humeurs peccantes; d'autant que les vapeurs formées par les exhalaisons des influences qui s'élèvent dans la région des maladies venant—pour ainsi dire—à—Entendez-vous le latin?

Géronte. En aucune façon.

Sganarelle (*se levant brusquement*). Vous n'entendez point le latin?

Géronte. Non.

Sganarelle. Cabricias, arci thuram, catalamus, singulariter, nominativo, hæc musa, la muse, *bonus, bona, bonum. Deus sanctus, est-ne oratio latinas?*

Géronte. Ah! que n'ai-je étudié!

Jaqueline. L'habile homme que v'là!

Lucas. Oui, çà est si biau que je n'y entends goutte.

Sganarelle. Or, ces vapeurs dont je vous parle venant à passer du côté gauche où est le foie au côté droit où èst le cœur, il se trouve que le poumon ayant communication avec le cerveau, par le moyen de la veine cave, rencontre en son chemin lesdites vapeurs qui remplissent les ventricules de l'omoplate, et parce que lesdites vapeurs—écoutez bien ceci, je vous conjure.

Géronte. Oui.

Sganarelle. Ont une certaine malignité qui est causée—soyez attentif, s'il vous plaît.

Géronte. Je le suis.

Sganarelle. Qui est causée par l'âcreté des humeurs engendrées dans la concavité du diaphragme, il arrive que ces vapeurs—*Ossabandus, nequeis, potarinum.* Voilà justement ce qui fait que votre fille est muette.

Géronte. On ne peut pas mieux raisonner, sans doute. Il n'y a qu'une seule chose qui m'a choqué! c'est l'endroit du foie et du cœur. Il me semble que vous les placez autrement qu'ils ne sont; que le cœur est du côté gauche, et le foie du côté droit.

Sganarelle. Oui, cela était autrefois ainsi; mais nous avons changé tout cela, et nous faisons maintenant la médicine d'une méthode nouvelle.

Géronte. C'est ce que je ne savais pas, et je vous demande pardon de mor ignorance.

Sganarelle. Il n'y a point de mal; et vous n'êtes pas obligé d'être aussi habile que nous.

Géronte. Assurément. Mais, monsieur, que croyez-vous qu'il faille faire à cette maladie?

Sganarelle. Mon avis est qu'on la remette sur son lit, et qu'on lui fasse prendre pour remède quantité de pain trempé dans du vin.

Géronte. Pourquoi cela, monsieur?

Sganarelle. Parce qu'il y a dans le vin et le pain, mêlés ensemble, une vertu sympathique qui fait parler. Ne voyez-vous pas bien qu'on ne donne autre chose aux perroquets, et qu'ils apprennent à parler en mangeant cela?

Géronte. Cela est vrai! Ah! le grand homme! Vite, quantité de pain et de vin.

Sganarelle. Je reviendrai voir sur le soir en quel état elle sera.

Geography: The work for the year was to be a review of the geography of the world taken up in correlation with the history. The ancient world and southern

Europe was to be studied in connection with Roman history; northern Europe with the history of the British isles; and the rest of the world in the study of the British colonies. Perhaps it is needless to say that scarcely more than half of the outlined work was ever touched by the class, nor indeed was the plan laid down beforehand always followed. To foresee such a plan that should be completely followed has been impossible, at least to this teacher, for the interest of the children has never yielded itself willingly to such sharp prevision. And since the children were considered, as far as possible, in the light of free social agents, they could never be treated as soldiers in a barrack.

Another thing that tended to break the prearranged plan was the unexpected appearance of new and sudden interests on the part of the class. It appears that if the children are not merely following the stale text of some book, the subject of geography, especially when viewed as a background of human action, is ever appealing to lead its students into fresh and unexpected ways. For instance, the class was reading Tacitus's description of Britain in connection with a history lesson. The Latin writer said that the days in Britain were shorter than the days in Rome. Instantly the class took fire, and a controversy rose over the truth or falsity of Tacitus's statement. The teacher, although he had not foreseen this event, judged the class interest of more value than his plan; so the plan gave way, and for three days history and geography yielded to a study of the phenomena of day and night, and their respective lengths. And in that time nearly every member of the class was eager enough to do personal research either in the library or in the laboratory, to prove the truth of his position. Perhaps it is well that the teacher be not too clever in this matter of planning, for much of the strength and vigor of interest comes from its unexpectedness—its surprise of time and occasion.

Whenever a country or place came up for study, the class would get at it in two ways: (1) Given the set of conditions in which that country found itself, what would be the results? (2) What is this place like to us who as travelers visit it? The first question brought out the influences of climate, the agricultural value of the land, the kinds of crops raised, kinds of industrial pursuits, the commerce of the country and its tendency to war with its neighbors, and the probable influence of these things upon its people; and the second question dealt with the topography of the land, its mountains, rivers, and plains, the location of its cities and their distances from one another, the beauty or ugliness of its cities and the kind of people living in them, and their art and architecture.

The class after such a year in geography probably could not pass a good examination on the capitals of the world—though maybe it could—at least no pains has been taken to prepare it for such examination. The whole weight of the study was to get the children to draw inferences from a collection of facts, and to make them keen to see a relation between man and nature.

Music: (Miss Payne.) Songs—*Voices of the Woods* (Rubinstein's Melody), *The Violet* (Part Song), *The Sword Song*, *Wha'll be King but Charlie*, in Songs of Life and Nature; *The Happy Farmer*, Third Book, Modern Music Series; *Forge Song*.

The High School

Ninth and Tenth Grades

Latin, Eighth and Ninth Grades: (KATHARINE M. STILWELL.) The class will continue reading the Helvetian War. They have made relief maps of Gaul, and of the Helvetian plateau. These maps will be further used to trace the route taken by the Helvetians, and to locate the events mentioned in the text.

The class will trace the route through the country of the Sequani, between the Jura and the Rhone, and will discuss the effect of this movement upon the Roman province:

1. The Rhone River as a protection.
2. No armed force in that part of the province.
3. The feeling of the Sequani and the Aedui toward the Romans.
4. Influence of Ariovistus.

This will enable the pupils to put themselves in Caesar's place, to consider the various moves possible, and to decide which move would be of the greatest advantage to the Romans.

They will then follow the Helvetians from the plateau down the Rhone valley to the left bank of the Saone, where the Tigurine were destroyed. The building of the bridge at this point will offer an opportunity for an investigation of Caesar's methods.

The events in this valley will be noted, the class presenting as dramatically as possible the speeches made in the conference between Caesar and Divico.

The line of march of the two armies will be followed north through the Burgundian plains up the right bank of the Saone to Macon, which will be considered the point of departure from the river valley. (This route is to the west of the railroad running between Dijon and Macon.)

The skirmish which took place on this march will show the weakness of Caesar's cavalry, while the trouble with the Aedui will enable the class to discover Caesar's habits in regard to his base of supplies and his treatment of his soldiers. On this latter point a comparison will be made between Caesar and Napoleon.

The course through the hills to the region south of Bibracte will be traced. The scene of the final battle will be located upon the hill Armecy, according to the authority of Colonel Stoffel. His plan of the battlefield will also be used in working out the details of the battle.

Drawings of the battlefield will be made by the class; also a clay model showing the Helvetians making their attack upon the Romans drawn up in three lines upon the hillside.

The class will then discuss the effect of this battle upon the whole political and military situation.

History, Ninth, Tenth, and Eleventh Grades: (GUDRUN THORNE-THOMSEN.) The Peloponnesian War and Times of Alexander.

The last topic for study was the Age of Pericles; however great, this period inevitably led up to the Peloponnesian War and its disastrous consequences. The Persian War reveals the best aspects of Greek political institutions, the Peloponnesian War their tragic weaknesses.

Pupils will study causes which brought about this civil war, and its leading events.

Central idea: The Peloponnesian War as a conflict between two agonistic principles—oligarchy represented by Sparta, democracy by Athens.

Points for discussion:

1. What were the real issues in the war?

2. Reasons why Athens was defeated.
3. Did oligarchy triumph over democracy?
4. Effect of war on Greek states.
5. Changes in Athens and Sparta during this period.
6. How did the war pave the way for Macedonian interference in Greek affairs?
7. Political conditions in Greece during and after war. Decline of public spirit.
8. Hegemony of Thebes.
9. Character study of Alcibiades and Epaminandos.

The children will study about the rise of Macedon and the reign of Philip.

Points for class-work:

1. Policy of Philip in dealing with Greek states.
2. His purpose.
3. Character of Philip.
4. Why did the Greeks fail in their struggle with the Macedonians, when having been able to withstand the Persian invasion?
5. Read and discuss in class abstracts from the Philippics of Demosthenes. What principles did Demosthenes advocate? Story of his life.

Pupils will make themselves familiar with the life and conquests of Alexander.

On a blackboard map Alexander's campaign will be marked off, giving the march of his army, the main battles, and the cities founded by him; the geography of the countries traversed will be considered, and the character of the people as contrasted with that of the Greeks. By taking into consideration the geographical knowledge of the time, the children will appreciate the enormous difficulties of the campaign.

They will make a study of Alexander, and compare Achilles and Alexander. Some of the many stories and anecdotes illustrative of his boyhood and manhood will be related. Plutarch's *Lives* will be read in class. Alexander's greatness as a man, statesman, and soldier will be analyzed.

Points for discussion:

1. Principles underlying federal league under Macedonian supremacy.
2. Why did Alexander turn eastward rather than westward in his conquests?
3. By what motive was Alexander actuated?
4. What were his plans? Were they feasible?
5. Effect of Alexander's conquests on contemporary civilization; growth of Hellenism; effect upon industry and commerce of the time.
6. What was Alexander's work for civilization?

Having finished that period of Greek history which closes with Alexander, the pupils will consider some of the topics given in the outline for April.

Expression: Pupils will write papers on some of the topics given for discussion, also character studies of Alexander and Alcibiades.

Maps will be made showing Alexander's campaign.

Mathematics, Ninth and Tenth Grades: (GEORGE W. MYERS.)

EXPERIMENT NO. 33. To find distance from earth to sun by geometrical methods connected with transit of Venus observations.

(a) Observers are displaced in longitude.

Let S, V, and E denote the sun, Venus, and the earth, respectively.

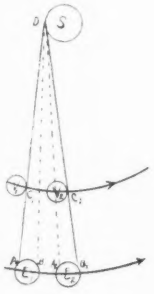


FIG. 30

When Venus is in line with the earth and sun, and between them, she is said to be in *inferior conjunction;* when in line, but beyond the sun, she is in *superior conjunction.* Observation shows that Venus requires 584 days to pass from either conjunction to the same conjunction again. This is the same as saying that it requires Venus 584 days to gain a complete revolution, or 360° on the earth. The

daily gain is accordingly $\frac{360}{584} = 37'$ (nearly); or 1′ 32″.5 per hour.

Two observers at stations A and B as far separated in longitude as possible on the earth; note the instant when Venus touches the solar disk. Of course, the easternmost observer at A_1 sees the beginning of the transit first. Venus moves onward in her orbit to V_2, when the western observer sees the first contact of Venus with the sun's disk. Evidently Venus, in the meanwhile, has gained the angle A_2DB_2 on the earth. If an observer were at D, this is the angle under which the chord A_2B_2 of the earth would be seen by him. If the observers at A and B are 6,060 miles apart in a straight line (and a former experiment has taught us how to compute this distance), and the angle is found to be 13″.2, since any magnitude must be 15,500 times its own dimension from the observer to open up 13″.2 at his eye (see Exp. No. 4), the distance to the sun DA (or DB) equals $15{,}500 \times 6{,}000 = 93{,}000{,}000$ miles. This exercise may be studied concretely by cutting out three wooden disks and attaching strings by light staples, carpet-tacks, or pins, as the lines are drawn in the cut.

Using the data of any table of planetary elements and substituting in the problem, work through and check the value of the distance from the earth to the sun.

(b) Observers displaced in latitude.

To obtain as long a base line as possible one observer should select a station as B in as high northern latitude as possible, and the other at C in as high southern latitude as possible. (EQ denotes equator.)

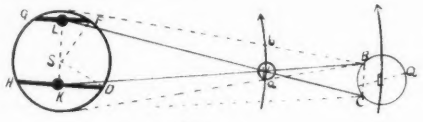


FIG. 31

To an observer at the northern station B, at the time of a transit, Venus will be seen projected on the disk of the sun, while she is crossing a cone whose vertex is at the observer, B, and whose elements are tangent to the sun's surface. Experiment No. 30 will show that Venus is at 0.72 of the earth's distance from the sun, so that the cone where Venus crosses it is only 0.23 of the solar diameter. The line ab, seen from B, is 32′.04″ on the average, *when the transit is central.* Seen from S, the line ab would then have the angular magnitude $\frac{23}{72} \times 32'.04'' = 10'\,14''.6$. (See under "a.") The hourly gain of Venus on the earth is 1′ 32″.5 on the average, and the duration of a transit of Venus, which is central, is then 6.64 hours. The duration of other transits will sustain such a ratio to 6.64 hours as the lengths of the chords of the solar disks traced by Venus's projection on the sun during transit sustain to the angular solar diameter 32′.04″.

This latter diameter is directly measurable in terms of angular units, and the chords traversed by the projection of Venus are readily computed from it.

If then viewed from C in high south latitude, Venus seems to describe a path such as FG, and from B a path such as DH, computing the times of transit with 6.64 hours, we find the ratio to 32′.04″ of the lengths of these arcs in angular value (SD and SF being 16′.02″). SK and SL are readily found by the Pythagorean Proposition.

[Note: GF is to $2SD$ as the time of transit along GF is to 6.64 hours.]

Angles BVC and DVF being equal, and BC and LK, or FD being supposed parallel, we have the triangles BVC and FVD similar; hence:

$$\frac{FD}{BC} = \frac{VB}{VS} = .\frac{23}{72}, \text{ or } FD = 0.35\ BC.$$

The observers B and C know their latitudes and longitudes and compute the length of BC. The line FD then becomes known in miles. Knowing, then, the length of FD in both degrees and miles, we compute, then, how many degrees and miles there are in LK and how many miles in SD, and we then have how many seconds one mile or 4,000 miles correspond to when seen over the distance from earth to sun. It is found that 4,000 miles viewed from the earth-sun distance would subtend an angle at the eye of 8″.8. But experiment No. 4 would show us that to make any magnitude open up 8″.8 at the eye it must be placed 23,250 × its own length from the observer. Hence the distance to the sun is $23{,}250 \times 4{,}000$ miles (roughly) $= 93{,}000{,}000$ miles.

Cut out two circular wooden disks such as BQC and $FGHD$, and fasten two strings with staples, one at B and D and the other at C and F. Running the strings through a bead at V, the problem may be made to stand out before the eye concretely. Globes will be better than disks if they are available.

EXPERIMENT No. 14.5*. To measure the altitude of the sun.

Cut from inch stuff and surface two boards of dimensions shown in the cut. Square up one edge, *PN*, of the square board to an accurate right angle with the adjacent face *MNPO*.

By the aid of the wedges place the rectangular board horizontal (indicated by pouring a little water upon it), and then set the square board edgewise upon it and edgewise to the sun in such position as to make the shadow at *s* as narrow as possible. Stick a pin in face of the vertical board at *a* about 2" from the edge *PN*. Now, stick a second pin at *b* so that its shadow shall fall upon that of pin *a*. Turn the board about so that edge *OP* shall be toward

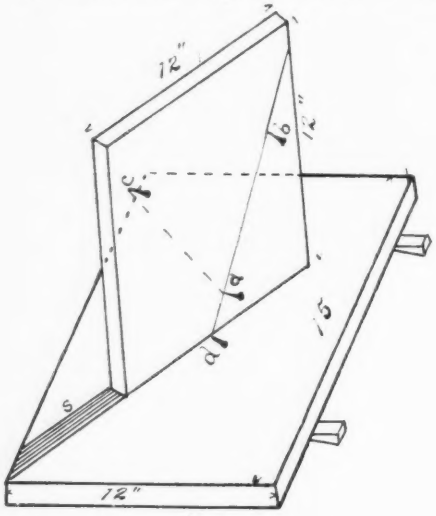


FIG. 14.5

the sun, and make the shadow *s* its narrowest again. Stick a third pin at *c*, as the pin *b* was placed formerly. Through the pin-marks draw the lines *ab* and *ac*, and with a protractor measure the angle *bac*. One-half of this angle will be the angular distance from the sun to the zenith for the mean of the times of sticking the pins at *b* and *c* respectively. Why?

Subtract this half angle from 90° and the difference will be the altitude of the sun above the horizon for the same time. Why?

One-half of the exterior angle *cad* will also be the altitude. Why?

EXPERIMENT NO. 14.6*. To construct a graph for the altitudes all day.

Let a number of students execute the foregoing experiment for eight, nine, ten, eleven, and twelve, one, two, three, and four o'clock. Work to nearest minute. Lay off the times on a horizontal line as shown in the figure, and the measured altitudes on vertical lines corresponding to the times, and draw a continuous line through the points thus located. Drawing any horizontal line, as A B, and bisecting it with a perpendicular, the intersection of the perpendicular with the curve will indicate the time by the clock used at which the sun's altitude was greatest.

By measuring the vertical distance from the horizontal line C D up to the curve we have the altitude for any time during the day.

The entire curve brings before the eye the law of the sun's variation of altitude for the day.

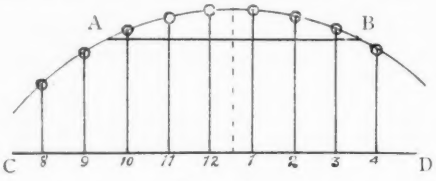


FIG. 14.6

Such curves, made at different seasons and compared, are instructive in many ways.

THE PRECESSIONAL GLOBE.

Description: *P*. The north pole of the heavens. *Q*. The north ecliptic pole. *R*. Brass circle with center at pole of ecliptic, radius, 23½°. *M*. Meridian graduated to degrees. *S*. Scale graduated on one edge to miles and on other to degrees. *T*. Thumb-screw to carry and clamp *S* along meridian. *H*. Wooden horizon, graduated. *E*. Equator. *C*. Ecliptic, and *D*, sliding support to *M*.

The circle *R* is perforated with 26 equally spaced holes, extending entirely around it, and around the south ecliptic pole is another precisely similar circle. At *P* is a pin, held in place by a spring, which may be set in any one of the 26 holes, a similar pin being first set in the diametrically opposite hole of the south pole circle.

Since the precessional motion carries the poles of the heavens around these circles once in 26,000 years, the spaces between adjacent holes corresponds to the motion of the poles during 1,000 years. It is therefore possible to bring the globe into such positions as to represent the aspect of the celestial motions about the instantaneous pole positions for any integral

*Experiments No. 14.5 and 14.6 are from Comstock's *Textbook of Astronomy*.

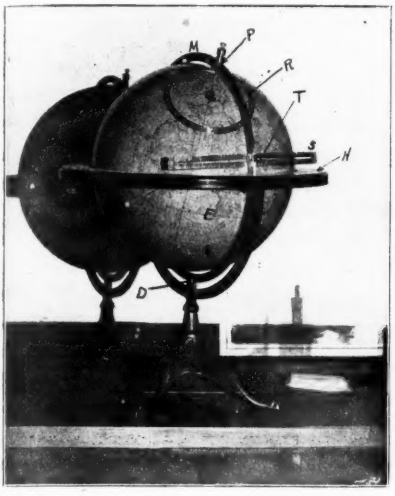


FIG. 32. PRECESSIONAL GLOBE.

number of thousands of years of the past or future. The positions of the poles for *any* epoch may be represented on this globe, while on an ordinary globe they can be represented for only a *single* epoch. The following important astronomical facts may be visualized by proper settings of the globe:

1. The revolution of the First of Aries through the signs of the zodiac.

2. The revolution of the celestial pole about the ecliptic pole.

3. Changes in the right ascensions and declinations of the stars.

4. Changes in the longitudes of the stars, but not in their latitudes.

5. The tropical year is shorter than the siderial year.

Exercises to be solved with the precessional globe.

EXPERIMENT NO. 34. To determine the Polestar at any given epoch.

(a) What star was nearest the north celestial pole when the great pyramid of cheops was built 6,000 (?) years ago?

(b) What star was nearest 1400 years ago? 1400 B. C.? 8500 B. C.? 14000 B. C.?

(c) When will Vega be the Polestar?

EXPERIMENT NO. 35. To draw the celestial equator at a given epoch.

This can be best done by means of the spherical blackboard fitted with the precessional circles.

Set the pole pins into the sockets corresponding to the epoch. Then with a crayon, or camel's-hair brush moistened with water-color, held against the O° of the meridian and touching the globe, roll the globe once around. If a number of equators for different epochs are thus drawn, the significance of the precession of the equinox becomes obvious.

Draw the equators for 500 B. C.; 10000 B. C.; and for 5000 A. D.

EXPERIMENT NO. 36. Find the right ascension and declination of stars for any epoch.

Set the pole pins to the given epoch as before, and bringing the star under the brass meridian, *M*, the declination may be read off directly.

For right ascensions elevate the celestial pole at an angle of 90° to the horizon. The horizon will then indicate the position of the celestial equator for that epoch. Now bring the poles of the ecliptic under the meridian, the north ecliptic pole being south of the north celestial pole. The point on the ecliptic coinciding with the east point of the horizon will then denote the first of Aries for the epoch. By means of the strip, *S*, read off along the horizon the number of degrees from the first of Aries to the brass meridian, *when the star has been brought under this meridian*. Dividing the number of degrees by 15 will give the right ascension in hours, minutes, and seconds.

(a) Find for the epochs 1000 A. D. and 10000 B. C. the right ascensions and declinations of the following stars: Arcturus, Aldebaran, Sirius, Procyon, Canopus.

EXPERIMENT NO. 37. To find the azimuths of stars at rising or setting for any required epoch.

Set the globe as before and rectify it for the latitude of the place of observation. Then bring the required stars to the eastern or western horizon according as the rising or setting azimuth is wanted. Read off the azimuth along the wooden horizon.

(a) Determine the azimuth at Thebes (Lat. 25° 40′ N.) of the Pleiades, Sirius, and Gamma Draconis and other stars, for 1000 B. C. and 3000 B. C.

(b) Repeat the above measures for the latitude of Chicago (41° 50′).

French, Ninth and Tenth Grades: (LORLEY ADA ASHLÉMAN.) After the reading of *La Dernière Classe* and *Le Siège de Berlin*, the children of the Ninth and Tenth grades, in memorizing the little scene "d'un comique parfait," from *Don*

Juan, will not only have an entire change of style and thought, but will also have an opportunity to appreciate the spirit of French comedy.

In connection with their study of Molière, they will read also the accompanying anecdote, entitled *Molière le Père de la Comédie Française.*

Molière le Père de la Comédie Française

L'acteur anglais, Kemble, étant venue en France en 1800, fut invité par ses camarades français à un grand dîner. La conversation tomba naturellement sur le théâtre. On passa en revue les époques, les genres, et enfin les auteurs. Les Français, en gens bien élevés, payèrent à Shakespeare leur tribut d'hommages.

L'un d'eux, cependant, patriote avant tout, lança le nom de Molière. L'acteur anglais répondit froidement: "Molière n'est pas un Français." Etonnement de tous. "Expliquez-vous. Est-ce que par hasard Molière serait un Anglais?"

"Pas plus Anglais que Français."

"Mais alors?"

"Je me figure que Dieu dans sa bonté, voulant donner au genre humain le plaisir de la comédie, créa Molière, et le laissa tomber sur terre, en lui disant: 'Homme, va peindre, amuser, et si tu peux corriger tes semblables.' Il fallait bien qu'il descendît sur quelque point du globe, de ce côté du détroit ou bien de l'autre, ou bien ailleurs. Nous n'avons pas été favorisés; c'est de votre côté qu'il est tombé. Mais il n'est pas plus à vous qu'à personne; il appartient à l'univers."

Charade

Solution de la charade du mois de mai "passerau."

Comédie de Don Juan

[Cette scène excellente est d'un comique parfait: celle où Don Juan éconduit son débiteur M. Dimanche.]

Don Juan. Ah! monsieur Dimanche, approchez. Que je suis ravi de vous voir, et que je veux de mal à mes gens de ne vous pas faire entrer d'abord! J'avais donné ordre qu'on ne me fît parler à personne; mais cet ordre n'est pas pour vous, et vous êtes en droit de ne trouver jamais de porte fermée chez moi.

Monsieur Dimanche. Monsieur, je vous suis fort obligé.

Don Juan (parlant à la Violette et à Ragotin). Parbleu! coquins, je vous apprendrai à laisser monsieur Dimanche dans une antichambre, et je vous ferai connaître les gens.

M. Dimanche. Monsieur, cela n'est rien.

Don Juan. Comment! vous dire que je n'y suis pas, à monsieur Dimanche, au meilleur de mes amis!

M. Dimanche. Monsieur, je suis votre serviteur. J'étais venu—

Don Juan. Allons, vite, un siége pour monsieur Dimanche.

M. Dimanche. Monsieur, je suis bien comme cela.

Don Juan. Point, point, je veux que vous soyez assis contre moi.

M. Dimanche. Cela n'est point nécessaire.

Don Juan. Otez ce pliant, et apportez un fauteuil.

M. Dimanche. Monsieur, vous vous moquez; et—

Don Juan. Non, non, je sais ce que je vous dois; et je ne veux point qu'on mette de différence entre nous deux.

M. Dimanche. Monsieur—

Don Juan. Allons, asseyez-vous.

M. Dimanche. Il n'est pas besoin, monsieur, et je n'ai qu'un mot à vous dire. J'étais—

Don Juan. Mettez-vous là, vous dis-je.

M. Dimanche. Non, monsieur, je suis bien. Je viens pour—

Don Juan. Non, je ne vous écoute point si vous n'êtes assis.

M. Dimanche. Monsieur, je fais ce que vous voulez. Je—

Don Juan. Parbleu! monsieur Dimanche. Vous vous portez bien.

M. Dimanche. Oui, monsieur, pour vous rendre service. Je suis venu—

Don Juan. Vous avez un fonds de santé admirable, des lèvres fraîches, un teint vermeil et des yeux vifs.

M. Dimanche. Je voudrais bien—

Don Juan. Comment se porte madame Dimanche, votre épouse?

M. Dimanche. Fort bien, monsieur, Dieu merci.

Don Juan. C'est une brave femme.

M. Dimanche. Elle est votre servante, monsieur. Je venais—

Don Juan. Et votre petite fille Claudine, comment se porte-t-elle?

M. Dimanche. Le mieux du monde.

Don Juan. La jolie petite fille que c'est? Je l'aime de tout mon cœur.

M. Dimanche. C'est trop d'honneur que vous lui faites, monsieur. Je vous—

Don Juan. Et le petit Colin, fait-il toujours bien du bruit avec son tambour?

M. Dimanche. Toujours de même, monsieur. Je—

Don Juan. Et votre petite chien Brusquet, gronde-t-il toujours aussi fort, et mord-il toujours bien aux jambes les gens qui vont chez vous?

M. Dimanche. Plus que jamais, monsieur.

Don Juan. Ne vous étonnez pas si je m'informe des nouvelles de toute la famille; car j'y prends beaucoup d'intérêt.

M. Dimanche. Nous vous sommes, monsieur, infiniment obligés. Je—

Don Juan (*lui tendant la main*). Touchez donc là, monsieur Dimanche. Êtes-vous bien de mes amis?

M. Dimanche. Monsieur, je suis votre serviteur.

Don Juan. Parbleu! je suis à vous de tout mon cœur.

M. Dimanche. Vous m'honorez trop. Je—

Don Juan. Il n'y a rien que je ne fisse pour vous.

M. Dimanche. Monsieur, vous avez trop de bontés pour moi.

Don Juan. Et cela est sans intérêt, je vous prie de le croire.

M. Dimanche. Je n'ai point mérité cette grâce, assurément. Mais, monsieur—

Don Juan. Oh! çà, monsieur Dimanche, sans façon, voulez-vous souper avec moi?

M. Dimanche. Non, monsieur, il faut que je m'en retourne tout à l'heure. Je—

Don Juan (*se levant*). Allons, vite un flambeau, pour conduire monsieur Dimanche; et que quatre ou cinq de mes gens prennent des mousquetons pour l'escorter.

M. Dimanche (*se levant aussi*). Monsieur, il n'est pas nécessaire, et je m'en irai bien tout seul. Mais—

Don Juan. Comment? Je veux qu'on vous escorte, et je m'intéresse trop à votre personne. Je suis votre serviteur, et, de plus, votre débiteur.

M. Dimanche. Ah! monsieur—

Don Juan. C'est une chose que je ne cache pas, et je le dis tout le monde.

M. Dimanche. Si—

Don Juan. Voulez-vous que je vous reconduise?

M. Dimanche. Ah! monsieur, vous vous moquez! monsieur—

Don Juan. Embrassez-moi donc, s'il vous plaît. Je vous prie encore une fois d'être persuadé que je suis tout à vous, et qu'il n'y a rien au monde que je ne fisse pour votre service.

German, Ninth and Tenth Grades: (DR. SIEGFRIED BENIGNUS.) For exercises in grammar—especially in irregular verbs—in oral and written expression, the present condition of Greece will be studied.

Memorizing:

Das Lied der Deutschen

Deutschland, Deutschland über alles, über alles in der Welt,
Wenn es stets zu Schutz und Trutze brüderlich zusammenhält,
Von der Maas bis an die Memel, von der Etsch bis an den Belt—
Deutschland, Deutschland über alles, über alles in der Welt!

Deutsche Frauen, deutsche Treue, deutscher Wein und deutscher Sang
Sollen in der Welt behalten ihren alten schönen Klang
Und zu edler That begeistern unser ganzes Leben lang—
Deutsche Frauen, deutsche Treue, deutscher Wein und deutscher Sang.

Einigkeit und Recht und Freiheit für das deutsche Vaterland,
Danach lasst uns alle streben brüderlich mit Herz und Hand!
Einigkeit und Recht und Freiheit sind des Glückes Unterpfand—
Blüh'im Glanze dieses Glückes, blühe, deutsches Vaterland!

—*Hoffmann aus Fallersleben, 1841.*

Eleventh and Twelfth Grades

French, Eleventh and Twelfth Grades: (Lorley Ada Ashléman.) Translation, clear, accurate, simple, adequate yet idiomatic, is not only the best test of the knowledge of both idioms, but it is a work of art as well as science, and of conscience too, disciplining the highest powers of insight, skill, and taste, both in thought and expression. As a training in the mother tongue, it is superior to all the devices of rhetoric. There is no other discipline incident to language-study so valuable as translation rightly conceived, yet there is nothing more harmful than those miserable verbal paraphrases which, under the utterly false name of "literal translation," are so often not only allowed but required.

Such a translation is false alike to the foreign and to the native language. Only idiom can translate idiom, or style translate style. It is only by doing our best that we can truly conceive the ideal and the unattainable.

The discovery of a family history of one of the pupils—a family history connected with one of the most exciting and tragic periods in French history—suggested the material for translation work.

A most interesting, true story will be given to the different French classes by translating the tale of the thrilling, romantic escape from the Bastile and final settlement in America of a man—the great-grandfather of one of the pupils—who, for loyalty to his king, was condemned to the guillotine.

Joseph Alexandre de Chabrier de Peloubet

Joseph Alexandre de Chabrier de Peloubet, l'ancêtre de la famille Peloubet aux Etats-Unis est né le quatre mars mil sept cent soixante quatre au Château de Peloubet à un mille de Lauzun, ville du Lot et Garonne, à mi chemin entre Bordeaux et Agnes.

Selon les régistres de la mairie, c'était le onzième enfant et le cinquième fils du noble Michel François de Chabrier, écuyer et sieur de Peloubet et de Madame Marguerite de Vendeuil, fille, selon son rapport du duc ou comte de Vendeuil.

Deux de ses frères servirent dans la grade du corps du Roi Louis XVI., mais Alexandre était trop court de taille pour y'être reçu, quoiqu'il s'adressât au roi pour obtenir l'appointement. N'ayant pas de succès de ce côté là, il s engagea comme correspondant dans la maison commerciale de Dubreuil et Dubret à Bordeaux, et il passa sa vie sur mer jusqu'à l'âge de vingt-neuf ans, mil sept cent soixante quatre, visitant les Indes Occidentales la plupart du temps.

La Révolution française éclata, et il retourna chez lui pour assister le roi contre la révolte d'un peuple aimant la liberté. L'âge avancé de

son père le décida à occuper une position neutre. Pendant quelque temps il évita le danger, plus tard il fut emprisonné dans la Bastille par les révolutionnaires. Il mourut à l'âge de quatre-vingt cinq ans.—MARGARET NORTON.

Pendant les trois années que Joseph Alexandre était dans l'armeé royale on dit qu'il a été engagé dans treize batailles. Sa division était à la frontière d'Allemagne quand le roi s'y trouvait. Dès que la nouvelle de sa mort leur arriva les soldats se dispersèrent sur le champ et on permit à chaque soldat de se trouver une place de sûreté.

Joseph Alexandre s'enfuit en Allemagne. Après quelque temps il retourna chez lui, sûr que l'excitation s'était calmée et qu'il serait en sûreté. Il se trompa, aprés n'avoir été avec sa famille que peu de temps il fut arrêté comme aristocrate et ami des royalistes. On le jeta en prison, il fut examiné et condamné à la guillotine.

Le jour était fixé pour son exécution. Elle devait avoir lieu au lever du soleil. Vers minuit, quelques heures avant le moment fatal le gêolier, probablement corrompu par des amis vint à sa cellule et le conduisit silencieusement dans une grande chambre meublée d'une chaise et d'une table sur laquelle était une chandelle allumée. Ce changement s'était opéré si vite et si silencieusement qu'il lui semblait rêver. Revenant de sa surprise il était sûr qu'on proposait son évasion. Il chercha une parte secrète dans le mur, quelques planches détachées dans le plancher, mais en vain. S'asseyant sur une chaise il renonçait à tout espoir quand il lui arriva de regarder derrière la table.—JOHN NORTON.

Il la déplaça et trouva un trou dans le mur. Il s'y enfonça à corps perdu et tomba à terre, quelques dix pieds, se blessant un peu. Quand il se leva il trouva qu'il était hors de prison et bientôt il gagna la rue.

Il tressaillit quand un homme à cheval s'approcha et qu'il lui dit en passant, "Sous cet arbre là vous trouverez un cheval et un passeport." Il ne pouvait pas comprendre ce que cela voulait dire mais il se décida d'y aller. Sous l'arbre il trouva un passe-port, un cheval, et une charrette de colporteur. Sans recherche et délai il monta à cheval et se mit en route ne doutant plus que tout avait été arrangé pour lui. Il n'a jamais su à qui il devait son évasion, mais quand le soleil se levait qui devait être témoin de son exécution il était à une bonne distance de sa prison et bientôt sous la déguise d'un colporteur il était en Allemagne où il demeura plusieurs années. Pour son maintien il apprit à faire des instruments musicals, tels que la flute, le fifre, et le clairon, occupation qu'il continua pour la plus grande partie de sa vie.—ELSIE HENNE.

Mathematics, Eleventh and Twelfth Grades: (GEORGE W. MYERS.) This month will be given to a review of geometry, with especial emphasis upon applications. The shortness of the time which remains for this work will make possible little more than to point out the need for geometry in practical affairs, and to give an insight into the practical reasons for learning it.

So far as possible when a practical problem has been solved geometrically, the trigonometrical solution will also be given. Many of the exercises and problems will relate to the earth as a sphere, to topographic surveying, to astronomical and physical questions. The following headings will suggest the source from which the subject-matter will be largely drawn:

1. Theory of the sextant.
2. Theory of time and its determination.
3. The mathematics of triangulation.
4. Theory of the cylinder, cone, and sphere as applied in geography (map projection), architecture, and engineering (type forms).
5. Applications to earth, moon, and sun.
6. Theory of triangle, parallelogram, polygon, and polyhedron applied to the laws of force, and to the subject of center of gravity.
7. Review of abstract geometry with reference to these seven principles:
   (a) Equality by superposition (Congruency).
   (b) Inequality, how established.
   (c) Measurement of central and inscribed angles.
   (d) Theory of proportionality and of parallels.
   (e) Areas of plane figures all reduced to the triangle.
   (f) Principle of limits.
   (g) Reduction of solid, or space, geometry to plane geometry by analysis of figures.

The object of the review is to revive and bind together the trunk lines of thought

running through the subjects of geometry and trigonometry, and to give the pupils a respect, which lies close enough to their experience to make an appeal, for the power which comes to the one who makes the matter, method, and spirit of the subject his own. No hesitancy will be entertained by the teacher to emphasize the utilities of the subject from the fear of converting the admittedly beautiful logic of the subject into a sordid agency for personal gain, because while the thinker *should* be a practical man, the practical (not so-called) man *must* be a thinker.

Domestic Science, Eleventh and Twelfth Grades: (ALICE P. NORTON.) The work this spring has been a study of the house as one factor in the home. During the last week some time has been spent on the drawing of house plans and their discussion. Each member of the class has made the plan of a city or country house, or a city flat; these have been brought to the class, and talked over and criticised there, especially with reference to the adaptation of each to its situation and to the needs of the family who are to live in it, to its general convenience, and to the amount of light and sunshine which can enter it.

A visit has been made to a large apartment building in the city, so well planned that every room is lighted by an outside window. In this same building the class saw the plants for artificial refrigeration, and for heating and lighting the building.

One lesson has been spent in a walk on the Lake Shore Drive, with Mr. Duncan, studying the different styles of architecture to be found, and their adaptation to dwelling-houses. As most of the class know nothing of architecture, the next lesson will be pictures from the stereopticon, illustrating the historic styles; later various walks in the city will be taken, and the houses criticised not only from the point of view of style, but of adaptation to their purpose.

Some study will also be made of the furnishing of the house. Especial emphasis will be laid upon simplicity and the possibility of beautiful effects with a small expenditure of money. Each pupil will be asked to choose the colors and furnishings for a room, taking into consideration the lighting, proportions, and purpose of the room, and to make a drawing of it. Use will be made of these drawings in the kindergarten and grades.

Special topics, such as ventilation, heating, plumbing were assigned the pupils early in the quarter. These will be reported on and discussed, as far as time allows.

Chemistry, Eleventh and Twelfth Grades: (ALICE P. NORTON.) Work with the minerals has led to the further study of the metallic elements and to their industrial uses. The examination and identification of some iron pyrites, picked up on the lake shore during an excursion, began the study of the ores of iron and of its various compounds. The study of ferrous and ferric salts, and the oxidization of one to the other; the tests for iron, the examination of different substances (bluing, for example) for its presence; the removal of iron rust, and similar work, has given opportunity for both discussion and laboratory work. The iron industries, in which the class have expressed interest, will be considered next, and a visit will be made to some rolling mills.

Much of the time for this month will be spent upon the industrial applications of chemistry, and several field-trips will be made. On the other hand, the questions of the class are bringing out more fully than before some of the theoretical sides of the science.

Music. High School: (MISS PAYNE.) Songs: *Spring Song* (duet), Abt; *The*

Violet (duet), Songs of Life and Nature; *Voices of the Woods* (Rubinstein's Melody in F); *The Forge*. Voice work; exercises in the open vowel sounds, with sustained breath; scales and arpeggios, for ear and voice, with open vowel sounds; sight reading of new songs, with the difficult passages worked out on the scale tones.

Morning Exercises

JUNE	SUBJECT	LEADER
4.	Animal Life	Mr. I. B. Meyers.
5.	Summer Sports	Miss Crawford.
6.	Chivalry	Mr. Flint.
7.	Current Events	Miss Fleming.
11.	Magazine Illustration	Miss Hollister.
12.	Florence, The City Beautiful	Mrs. Flint.
13.	Kipling	Mr. Bass.
14.	Current Events	Miss Allen.
18.	June	Miss Van Hoesen.
19.	Flowers of France	Mlle. Ashléman.
20.	The Summer Solstice	Miss Baber.
21.	Current Events	Miss Champlin.

Historical Events and Birthdays

June	2	Dr. James Hutton	1726
"	4	George III.	1738
"	5	Socrates	468
"	6	Velasquez	1500
"	9	J. Howard Payne	1792
"	12	Harriet Martineau	1802
"	17	John Wesley	1703
"	19	Chas. Kingsley	1810
"	24	Henry Ward Beecher	1813

Good Night

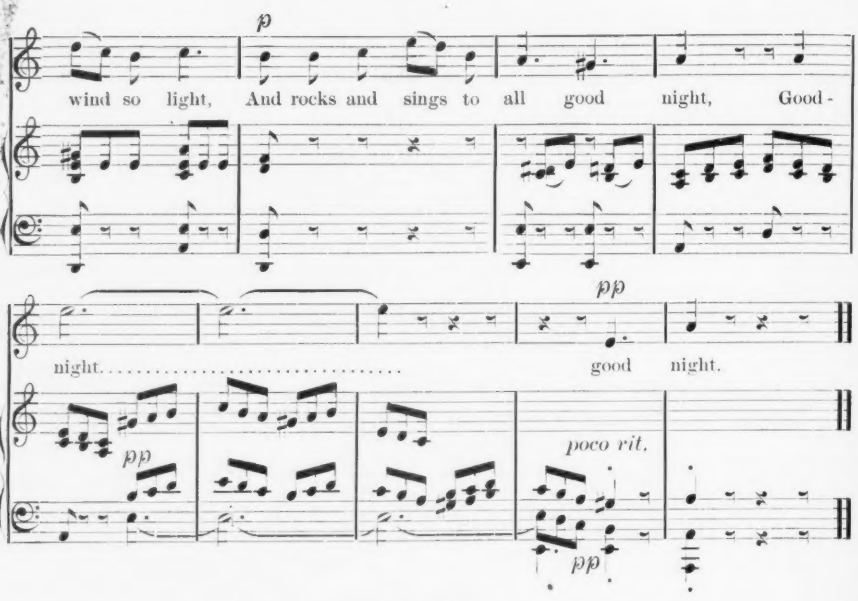
From the German of Lowenstein.
Tr. by BERTHA PAYNE.

W. TAUBERT.

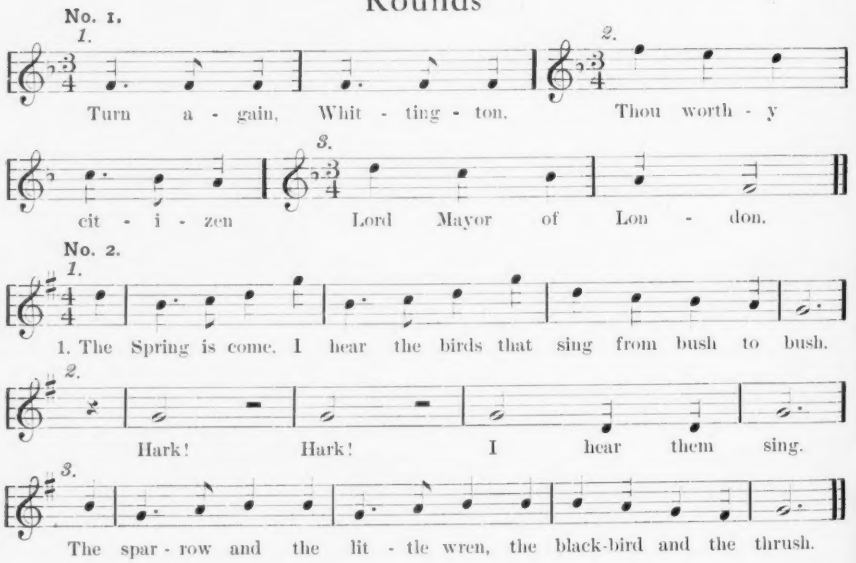
Andantino con moto.

1. It is so dark a - bout me here, I've
2. Dear moth - er, have you left us all? We
pp
sought a bed both far and near, O dear - est blos - som, let..... me
freeze with cold, do hear our call. In chil - ly nest the bird - lings
in. The blos - som says, "Come bee - tle, come, You shall with me right
call. The moth - er chirps, "Hush, I am here, Nes - tle down warm - ly
wel - come be, Come, bee - tle, come; Come, bee - tle, come, You shall with me right
sleep without fear, Sleep with-out fear, Sleep with-out fear, Nes - tle down warmly.

wel - come be. Good night.....
sleep with-out fear. Good night.....
3. The flow - er shel-ters insect wings, To
ba - by birds the mother sings, And cov - ers them with down - y wings; Then
comes the evening wind so light, And rocks and sings to all good night, Then comes the evening


p
wind so light, And rocks and sings to all good night, Good-
night.....
pp
good night.
pp
poco rit.
pp

Rounds


No. 1.
1.
2.
Turn a - gain, Whit - ting - ton. Thou worth - y
3.
cit - i - zen Lord Mayor of Lon - don.
No. 2.
1.
1. The Spring is come. I hear the birds that sing from bush to bush.
2.
Hark! Hark! I hear them sing.
3.
The spar - row and the lit - tle wren, the black-bird and the thrush.